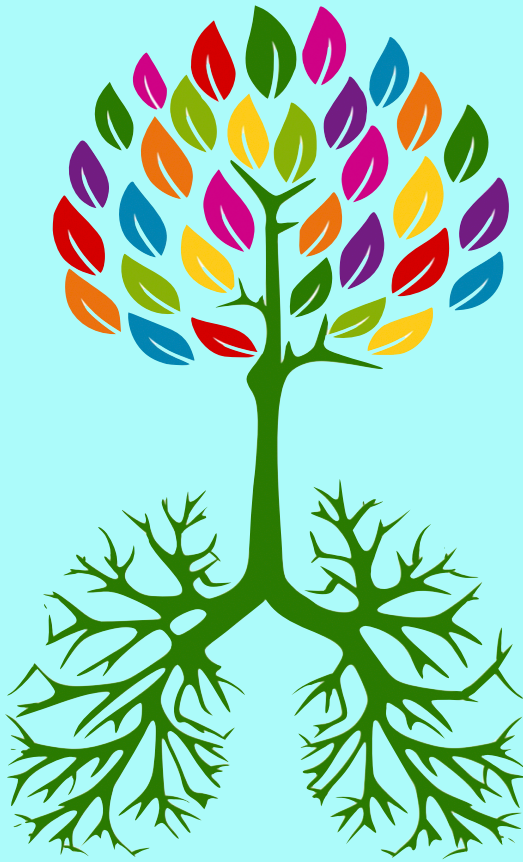


A Breath of Health



DR. INGO MAHN



Dedicated to **Dr. Ted Belfor** (1939 - 2023)

**Inventor of the Homeoblock
appliance. His mentorship
transformed my practice and my life.**

"Mouths are to
humans, what roots
are to plants"

Dr. Felix Liao
Author of "Six foot Tiger, 3 foot Cage"





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Introduction

From the moment we are born, our health and ability to survive depend on a properly functioning mouth and airway. As Dr. Felix Liao, one of my mentors who has studied issues with these structures for over 35 years so eloquently states, they are indeed our roots.

You're probably reading this book because you suspect you may have a problem with your "roots". Unfortunately, this is not an area that either doctors or dentists are trained to look at.

As I embarked on my journey to become a doctor of the airway and learned to look for the signs of impaired breathing and sleeping, it began to dawn on me just how prevalent these problems are.

Just hinting at the subject of poor sleep with patients often elicits a response of "Yes, I know!" These were patients I had examined for years, yet, because of my lack of training, I had never actually "seen" the problem

On the other hand, many of my patients who exhibit the signs of airway problems, tell me they think they are just fine. Invariably though, they also had all of the **symptoms** of impaired breathing and had no idea the two were related.

That is the purpose of this easy to read book. To help you determine if you have a hidden underlying problem that is either contributing to a persistent health issue or preventing you from feeling your best.

Let's get started!



Ingo Mahn, DDS, AIAOMT
Doctor of Integrative Medicine
Airway Mouth Doctor



Neither Dr. Ingo Mahn or any members of A Breath of Health, LLC are Sleep Physicians. Only a Board Certified Sleep Physician can make a diagnosis of Sleep Apnea. Dr. Ingo Mahn is trained in diagnosing and treating the oral contributions to an impaired airway and works in conjunction with other medical professionals in order to provide you with optimal care.

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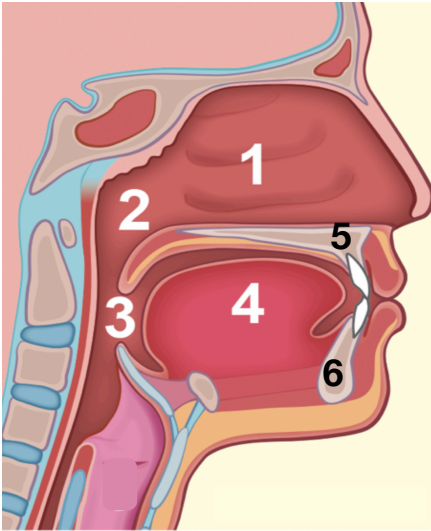
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Some Quick Terminology and Anatomy

"Everything should be made as simple as possible, but no simpler." - Albert Einstein

I hate to throw human anatomy at you right off the bat, but if you can visualize a cross section of the spaces we will be talking about, it will greatly help in the learning process.



The Functional Airway Spaces

- 1 - Nasal Cavity
- 2 - Nasal Pharynx
- 3 - Oral Pharynx
- 4 - Oral Cavity / Tongue

The Significant Bony Structures

- 5 - Maxilla (Upper Jaw)
- 6 - Mandible (Lower Jaw)

That's it! These spaces and structures are our roots. They serve to nourish us with oxygen and nutrients. Just as with plants, when fully developed, we **thrive!** If functioning improperly, they can also become the root cause of many of our health problems.

With the use of our state-of-the-art imaging equipment, we look at each of these areas carefully - **they are the key to your health.**

I also have another piece of imaging equipment that just got a major upgrade - **my eyes!** There is a saying that "Your eyes only see what your brain knows". I couldn't agree more. Sadly, I have been LOOKING at these airway problems for almost 40 years. Fortunately, with the newfound knowledge from my airway training, I am finally SEEING them!

What Can Be

With rare exceptions, all of us are born with the genetic blueprint to have fully developed airway structures.

Dr. Weston Price, a dentist in the 1930's, proved this with his extensive research on societies that had never been exposed to refined foods and sugars. None of these cultures even knew what a dentist was, **yet they all had perfectly formed airways, jaws and teeth.** As soon as a Western diet was introduced, he saw crowded teeth, decay and compromised airways.

That is the problem, we live in a society where everything works against us being the best possible version of ourselves. It's as if you had the architectural plans for a beautiful, spacious house, but due to lack of materials and skilled labor end up with a little shack.

Epigenetics is the study of how your behaviors and environment can cause changes that affect the way your genes are expressed.



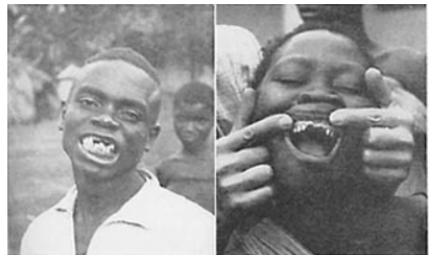
When a child is born with:

- A tongue tie - due to mom's low functioning thyroid
- Bottle-fed - due to the tongue tie (or doctor's recommendation)
- Has crowded teeth - due to being bottle-fed
- Eats a soft SAD (Standard American Diet) high in sugar, gluten and dairy
- Has teeth extracted for braces - due to crowded teeth

There is literally **NO** chance that the structures in the head and neck can reach their full potential.



Indigenous Diet



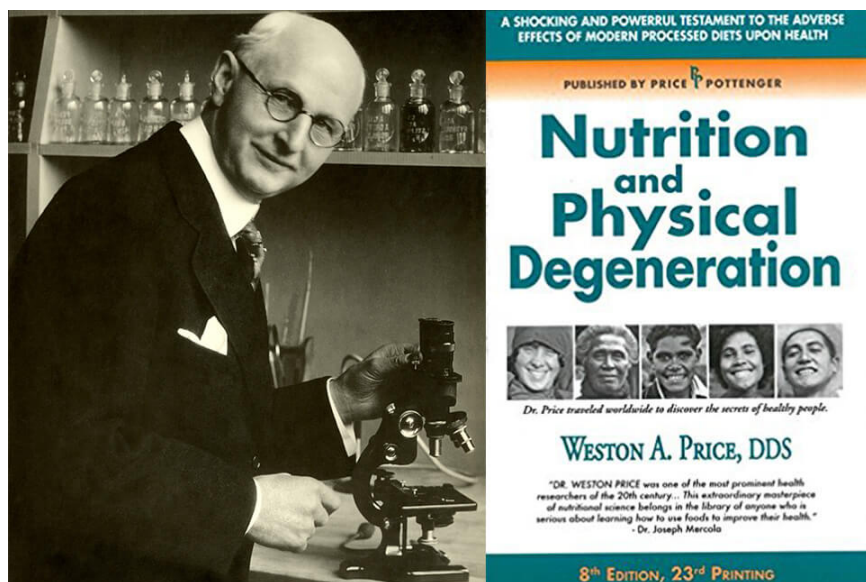
Western Diet

The good news is, that **that original blueprint still exists** in the double helix of your DNA.

We will get into more details about treatment in a later chapter, but through the use of Epigenetic Oral Appliances (which stimulate your stem cells), we can still get your DNA to express a better version of yourself.

Contrary to popular wisdom, this can be achieved even in adults!

If this concept interests you, I suggest (if you haven't already) to check out the Weston A. Price Foundation. Dr. Price's book is the Bible on epigenetics and his foundation (www.westonaprice.org) puts out an excellent quarterly newsletter.



America, We Have a Problem!

If you live in America and are trying to be healthy, the odds are not in your favor. Fluoridated water, insane vaccination schedules, a polluted food supply, bombardment with EMFs ... and that's just the start of the list! It's no wonder that despite spending more money per capita on "health-care" than any other nation, we are still one of the sickest.

From an evolutionary design, our bodies were simply not designed to deal with such a constant level of stress. For the most part though, we are still incredibly resilient if given enough time to "Rest & Repair".

Unfortunately, Americans are spending very little time in a state of recovery. Recent studies show that 83 million of us suffer from some form of Obstructive Sleep Apnea (OSA) - that's almost 40% of the adult population!

There are two things that make this situation **even worse** than it sounds:

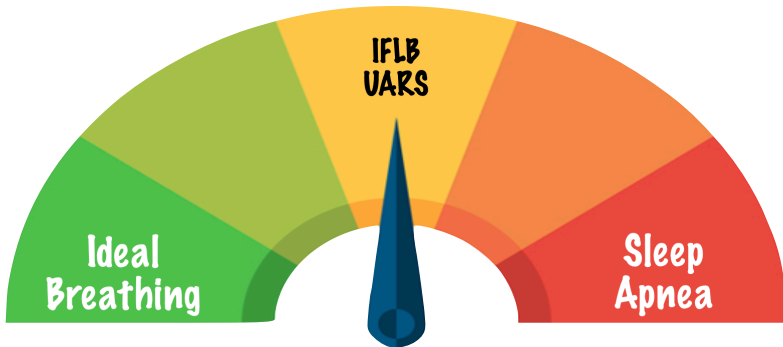
1. Approximately 80% of those 83 million cases remain undiagnosed.
2. This number does not even consider milder airway disorders.

Breathing disorders fall into a spectrum. You don't just go to bed one night and turn into a Sleep Apnea patient. This can be problematic, because milder obstructive sleep apnea are much more difficult to diagnose. In these early stages, the body is still able to adapt and compensate for the obstruction, meaning a sleep study may show the patient to be in the "normal" range.

I've had many of my patients tell me that, despite knowing they have sleep issues, their sleep study said everything was normal.

Apparently in the conventional medical world you are considered "normal" until you need a CPAP machine!





Conventional medicine sees sleep apnea as a “Black or White” issue. Either you have it or you don’t. When you look at it as a continuous spectrum though, things start to make much more sense.

There are two conditions that fall between Ideal Breathing and Sleep Apnea:

1. IFLB - Inspiratory Flow Limited Breathing
2. UARS - Upper Airway Resistance Syndrome

Reading their names gives you a clue as to what is happening.

When airflow becomes restricted, the body simply compensates by exerting more effort to maintain the required level of airflow. At this stage, a sleep test would consider things to be normal ... **THEY ARE NOT!**

In fact, some very dramatic physiological changes take place when your body is under the impression that it will be deprived of oxygen - **think of it as water boarding without the water!**

The body goes into a sympathetic (fight or flight) state and releases cortisol. This in turn raises blood sugar and initiates **a system wide inflammatory response.**

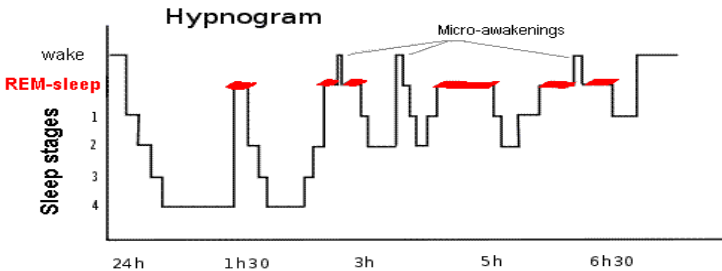
Imagine this happening night after night! And as if that wasn’t bad enough, you are also not getting the benefits of regenerative sleep.

Until you breathe well, you can’t sleep well. And, spoiler alert, none of the other things you are doing for your health will work well either!

More on that next ...

Breathing Disordered Sleep

Sleep is NOT a passive process. Our bodies are healing and detoxifying and our brains are storing memories and balancing neurotransmitters.



Above is a Hypnogram that shows the different levels of sleep.

During the first part of the night, we fall into a deeper state of sleep. During this quieter period our body temperature drops, heart rate and breathing slows and our muscles relax. This critical process allows for physical regeneration of our body. Failure to reach this level of sleep results in increased inflammation and reduced immune function. The result? A myriad of physical ailments. In fact, recent studies have linked breathing induced sleep disturbances to fibromyalgia and even cancer!

The second part of the night is a lighter level of sleep known as REM (Rapid Eye Movement). Restorative sleep during this time of night (when we dream), has been shown to facilitate learning, improve memory and enhance emotional health. Neurotransmitters and stress hormones are also balanced during this time and failure to sleep during this part of the night may lead to increased anxiety, phobias and depression.

When you realize the detrimental effects even slight airway obstructions can have on your sleep, you begin to understand that your health is at stake!

Do I Have a Problem?

There are a number of advanced diagnostic tools we have at our disposal to determine if you have an airway / sleeping problem.

Even without those, it is relatively easy to make an assessment based on **signs and symptoms**. Look at the form below and see how many conditions apply to you. Keep in mind though, even just ONE may be an indicator of an airway problem.

<i>Oral Signs</i>		<i>Physical Symptoms</i>	
Mouth breathing / dry mouth	Y N	Previous diagnosis of Sleep Apnea	Y N
Snoring / gasping	Y N	Wake up feeling tired more than 4+ times per week	Y N
Jaw clenching or tooth grinding	Y N	Daytime exhaustion	Y N
Morning headaches / sore jaw	Y N	Wake up to urinate more than once	Y N
Crowded teeth	Y N	Memory loss / difficulty concentrating	Y N
TMJ pain / clicking or popping	Y N	Neck and back pain	Y N
Scalloped sides of tongue	Y N	High blood pressure	Y N
Tongue tie	Y N	Anxiety or depression	Y N
History of tooth extractions	Y N	Unexplained weight gain	Y N
Bony growths on jaw	Y N	Erectile dysfunction / PMS	Y N
Total		Total	

All of the signs and symptoms are **warning signs** of an obstructed airway and we use this questionnaire in conjunction with other diagnostic tools.

It is truly remarkable how you see things differently once you are educated.



Previously, I would see a tooth like the one pictured to the left and all I would think about was the **"WHAT"**.

"What's going on and how am I going to fix it." That's how we are trained to think in school.

Now, my first question is **"WHY"**. Why did this patient manage to grind away the hardest substance in the body?

This patient went through two rounds of braces. Every time he stopped wearing his retainers, the teeth relapsed into a crowded position ...

WHY?



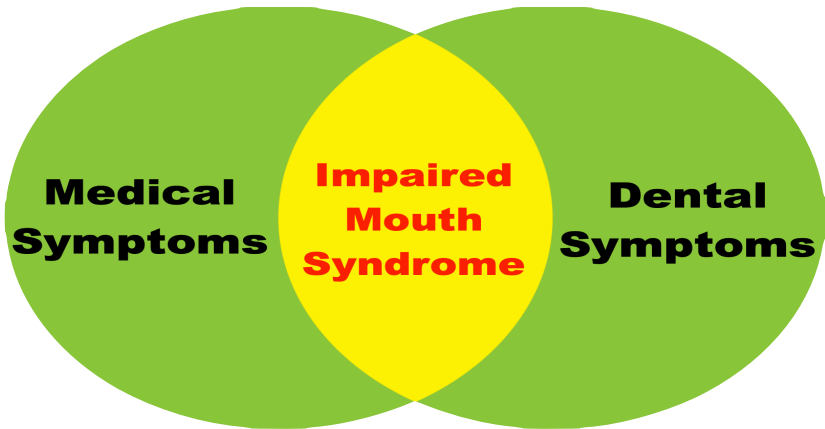
Do you think there might be a reason **WHY** this patient has severe indentations on the side of her tongue? In fact there is! Her mouth is too small for her tongue and she is trying to move her tongue out of the airway. She is also grinding her teeth (note the areas of wear on her molars) - a sure sign of a restricted or collapsing airway.

Despite all of our high tech diagnostic equipment, our eyes and ears are in many cases still the most reliable tools for finding these problems!

Often, a patient will insist that they sleep well and not even be aware that they are grinding and clenching their teeth in their sleep. All it takes is one quick look in the mouth with a trained eye. Crowded and worn teeth, large tori (bony growths on the jaw) and sore TMJs (jaw joints) quickly tell a different story.

The point is, as an Airway Mouth Doctor, it is my job to look beyond the teeth and determine if there are any oral contributions to any health problems you may be having.

I can't even tell you how many patients I have seen, that have been from doctor to doctor, and dentist to dentist without any resolution to their symptoms. The mouth, it appears, is a medical "no man's land".



If based on your symptoms and our preliminary evaluation we suspect an airway problem to be at the root cause, it's time to do a more thorough investigation.

Think of this first step similar to a blood pressure screening. It only tells us that there **may be** a potential problem, but not what it is. The same is true in this case. **Our next step will be to recommend an Airway Assessment to determine all of the factors contributing to poor breathing and sleep.**

But first, the WHY!

The True Problem

I first learned about the connection between proper breathing and health issues in 2015. Years went by and even after going to dozens of courses and workshops, I found myself unable to implement an airway program into my practice. All those courses had one thing in common. They all focused on the mandible (lower jaw).

Their final solution was always to pull the jaw forward by means of an appliance (which messes up the jaw joints), doing a full mouth reconstruction (expensive!!) or performing orthognathic surgery (breaking the jaw - ouch!).

None of these solutions actually fixes the problem!

Here's why. The lower jaw is NOT the problem. In most cases, the true problem is the maxilla (upper jaw).

Think of the upper jaw as the shoe and the lower jaw as the foot. What happens if the shoe is too small? The heel protrudes out the back of the shoe! Likewise, an under-developed upper jaw forces the lower jaw backwards and the teeth get crowded. As a result the tongue gets pushed back into the airway, causing the obstruction.

All of a sudden everything made sense.

It's all about putting the upper jaw in the right place. Then the lower jaw can find it's proper place and the tongue has enough room so that it does not get displaced back into the airway.

It's been quite a learning journey to get to this point. I am happy to have found a treatment that I know to be effective and can confidently recommend to my friends and family. As a matter of fact, I am currently going through the program myself (Hey, I want to breathe and sleep better too!)



As I mentioned, most airway treatments performed these days are a “BandAid” approach. Here is a summary of treatment options with their Pros and Cons. Our goal is to fully educate you and help you make a decision on what treatment option is right for you.

Impaired Mouth Treatment		
Options	Pros	Cons
Do Nothing	Inexpensive (in the short term)	Continue to live with conditions that will get worse over time
CPAP BiPAP	Forces air into lungs and can be used in short term to pay off “oxygen debt”	<ol style="list-style-type: none"> 1. Difficult to get used to 2. Disrupts bed partner sleep 3. Makes problem worse over time
Mandibular Advancement Device (MAD)	<ol style="list-style-type: none"> 1. Can be effective in increasing airflow and reducing snoring 2. Good as initial therapy, especially if CPAP can not be tolerated 	<ol style="list-style-type: none"> 1. Does NOT fix the problem 2. May cause TMJ problems 3. Need a device to get teeth to realign EVERY morning
Orthognathic Jaw Surgery	Able to achieve some expansion of airway volume and repositioning of both the upper & lower jaws	<ol style="list-style-type: none"> 1. VERY expensive surgery 2. Long post-op recovery period 3. Potential of post-op complications
Full Mouth Reconstruction	Changing the bite makes more room for tongue, opening the airway and allowing for better breathing	<ol style="list-style-type: none"> 1. Does not address upper airway 2. Costly and lengthy process 3. Requires “grinding down” teeth
SureSmile® or Invisalign®	Clear aligners straighten teeth and can achieve expansion to give the tongue more room	<ol style="list-style-type: none"> 1. Only effective in mild cases 2. Not an orthopedic appliance
VIVOS® or Start Thriving Appliance®	<ol style="list-style-type: none"> 1. Fixes the root cause 2. Expands the airway (even in adults) 3. Addresses oral contributions to physical ailments 	<ol style="list-style-type: none"> 1. Have to wear an appliance 16 hours a day and in some cases a face-mask while sleeping 2. Increased salivation with appliance 3. Makes speaking difficult
HomeoBlock™	<p>Same benefits as VIVOS® Start Thriving Appliance® BUT:</p> <ol style="list-style-type: none"> 1. Only worn 8 hours at night 2. Can talk with appliance in place 3. No face-mask necessary 	<ol style="list-style-type: none"> 1. Have to be able to tolerate wearing a retainer style appliance at night (which most people can)
POD™ Preventive Oral Device	<ol style="list-style-type: none"> 1. Superior alternative to night guard 2. Improves clenching & grinding 3. Some benefits of Uniblock appliances 4. Inexpensive 5. Use in tandem with other therapies 	None

The Problem with CPAP

Currently, CPAP (Continuous Positive Airway Pressure) is the gold standard for treating sleep apnea. The biggest problem with CPAP is that compliance is very low. After all, who wants to spend two nights in a sleep lab and then be told they have to wear a bulky, noisy contraption?



The other problem with CPAP is, that over long period of time, it may actually make the problem worse. Having to wear the CPAP mask with an elastic strap, can actually move the maxilla (upper jaw back) into the airway overtime. It is for this reason that many CPAP users end up having to keep increasing the pressure on their unit.

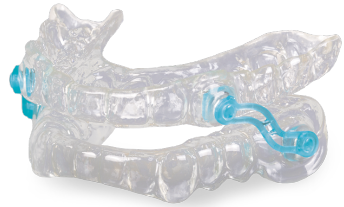
Again, it is important to remember, that as a dentist I am not able to diagnose or treat sleep apnea. My job is to look for undiagnosed oral contributions to these airway issues.

If you're currently wearing a CPAP, it is important that you continue to do so. Only your sleep physician can take you off your unit. As you know, even though it is only a short term fix, CPAP can be a lifesaver. However, our long-term goal is for you not to have to wear a CPAP unit and instead fix the root cause of the problem.

The Problem with Mandibular Advancement Devices

As the medical and dental professions have become aware of the prevalence of airway problems, more patients are being screened and treated for these conditions. It is in fact the fastest growing field in dentistry today.

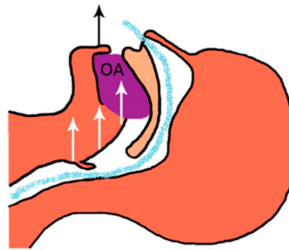
A large number of patients who are unable or unwilling to wear a CPAP device are turning to Oral Appliance Therapy (OAT). The most popular of these devices is referred to as a Mandibular Advancement Devices (MAD). As the name implies, this device is designed to hold the jaw in a forward position.



Silent Nite® sleep appliance



Obstructive Sleep Apnoea
obstructed airway



Mandibular Advancement
open airway

While these appliances have proven to be very effective, they are not without problems. Changes in the bite and joint pain are two of the most common side effects. Patients are instructed to wear an “AM Repositioner” that has to be used every morning to realign the teeth and joints.

Over time, the nightly trauma of these appliances can lead to permanent changes to the bite and jaw pain.

Fortunately, a better solution is available!

Home Sleep Study

The journey to address airway & breathing problems usually begins with a sleep study. Traditionally, patients had to go to a sleep center and spend two nights being monitored.

As you can imagine, this is not something most people felt comfortable doing!



Fortunately, technology involved to be able to do this type of testing at home.

While infinitely better than going to a sleep laboratory, the initial home sleep study equipment was still relatively cumbersome. Just recently, this technology took a quantum leap forward with the introduction of the SleepImage ring and the WatchPat.



These devices are extremely easy for patients to use and have a minimal impact on the normal sleep pattern. SleepImage now even has ring that the patient gets to keep. We can easily order more sleep studies and you don't have to worry about returning the equipment if you live a distance from the office.



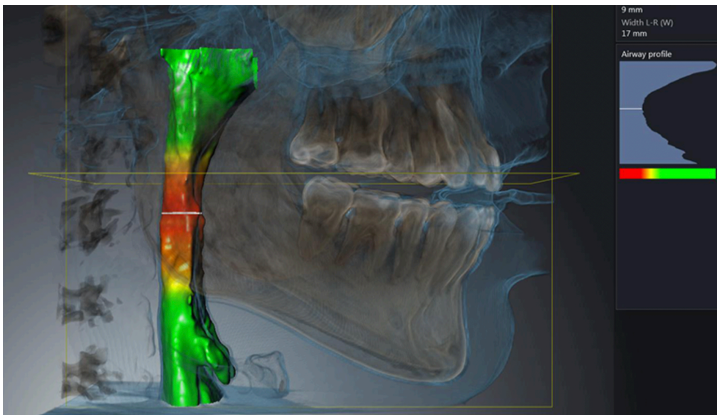
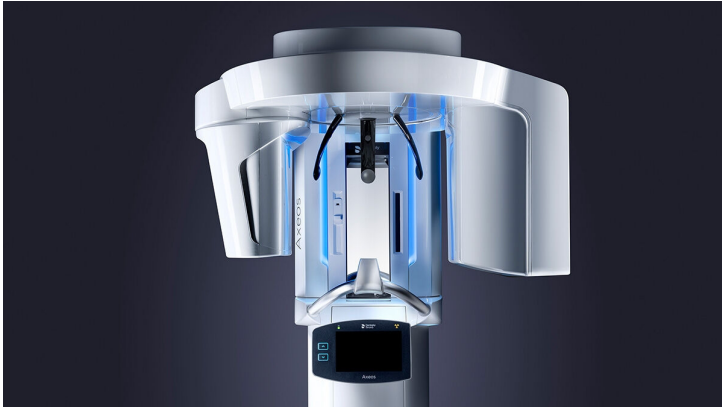
We generally use the data gathered from these units as a baseline to see what improvements have been achieved during therapy (a second HST is included with our airway therapy). However, we also work closely with a board certified sleep physician if we feel further interpretation is necessary.

Airway Assessment

After the initial screening, this appointment is the first step in getting a true picture of what's going on in your mouth. **We determine what's off, where and by how much.**

We use this thorough assessment, to develop a proper treatment plan. Here are the records we take:

1. **3D CBCT** image (usually already taken at your NP appointment).
 - ◆ Used to visualize airway, nasal structure such as the turbinates and sinuses as well as the spine. There is even a special software that specifically analyses the airway and shows any constrictions

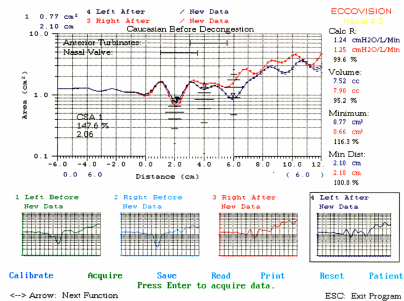


2. Pharyngometer / Rhinometer

- ◆ One of the most exciting new technologies in airway diagnosis is the Pharyngometer by Sleep Group Solutions. While the 3D CT scan gives us an excellent representation of physical structures, it does not tell us about the **collapsibility** of the airway.
- ◆ Breathing problems arise not just from an airway being too small, but even more from the **loss of muscle tone** that allows the airway to collapse. Think of it like a firehose. When pressurized, the hose has a large area through which water can pass. But, what happens when the pressure drops? The hose flattens and no water can pass.

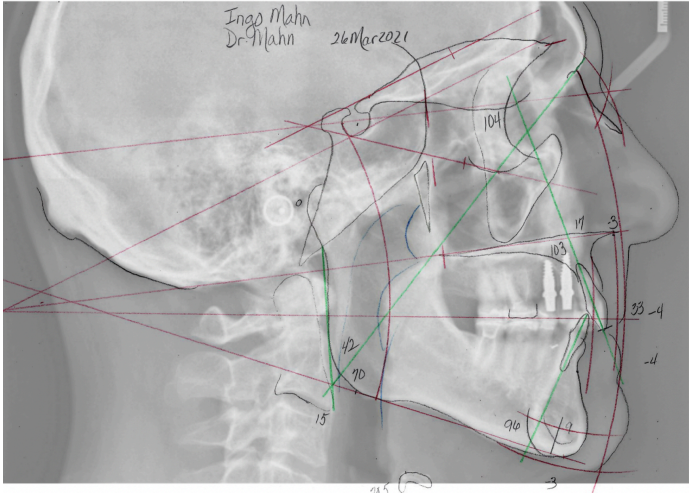


The Pharyngometer and Rhinometer measure the volume of the nasal cavity and pharynx in real time using sound waves (no radiation). We can even do multiple scans at different jaw positions to determine exactly where the jaw needs to be for optimal breathing. When used in conjunction with our other imaging technology, we get a very accurate picture of where the problem is.



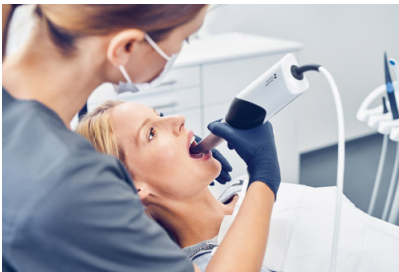
3. Cephalometric x-ray

- ◆ Used in some cases to analyze the relationship of skeletal structures as well as the anterior / posterior position of the upper jaw. That's me below.



4. 3D optical scan (instead of messy impressions)

- ◆ Used to create a model that allows us to analyze the width of your jaws and can also be used by the dental laboratory to fabricate an appliance



5. Photographs

- ◆ Of both your teeth as well as standing in front of a posture grid



6. Impaired Mouth Assessment

- ◆ Look at oral and physical signs and symptoms that indicate an airway problem. This as valuable as any high tech diagnostic tool we have!

7. Information for **SleepImage home sleep study**

- ◆ An easy to do 2 night home sleep study that may be evaluated by a board certified sleep physician (depending on the findings).

In some cases we may also suggest the need to work with other practitioners. These may include:

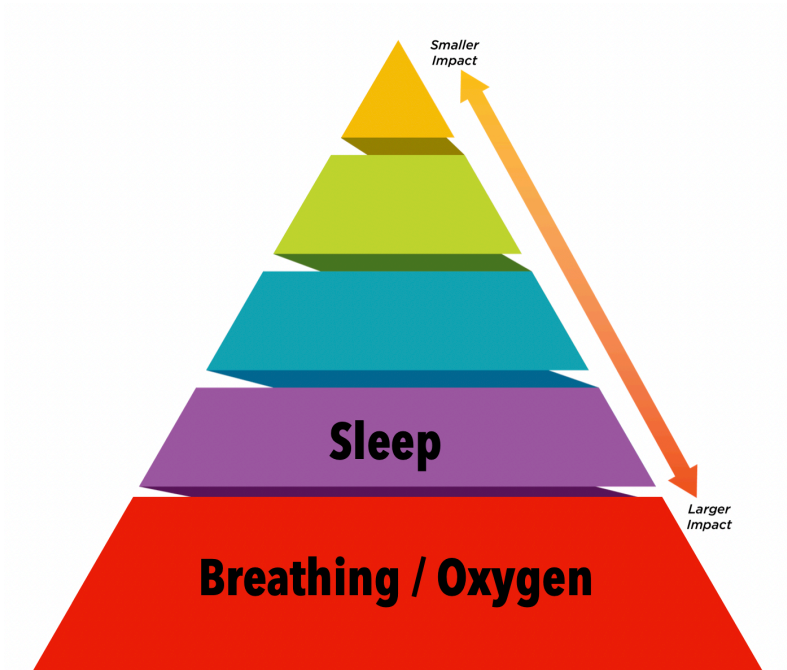
1. PRI Chiropractor or Physical Therapist
2. Myofunctional therapist
3. Allergist (Food & environmental)
4. ENT / Sleep physician
5. Nutritionist

More on that later. We will also be happy to work with any specialist you are already seeing. Our goal is to be a part of your health-care team that helps you achieve optimal health.

Your Foundation to Good Health

“Oral health is more than healthy teeth.”

**David Satcher, MD, US Surgeon General
Oral Health America 2000**



When you look at what determines our overall health, I imagine we could have a very spirited debate about where things rank. Of course, diet, exercise and

genetics all play an important role. However, after studying airway issues and their impact on sleep, **I am thoroughly convinced that good oxygenation and proper sleep are the very foundation of good overall health.**

For years, patients have asked me about the secret to my health. Apparently I look pretty healthy for my age (I was born in 1960). And for years I have jokingly responded "*I sleep good and I poop good*". Now that I'm learning about airway, I'm realizing how much truth there was in that statement.

The key to excellent health is allowing your body to go into a night-time **parasympathetic** "rest and digest" state. As long as we are able to do that, we are much more able to cope with living our days (especially during these times) in a sympathetic "fight or flight" state.

Unfortunately, it is easy to get caught in a downward health spiral. How do you recover when you are too exhausted to work out, stress eat (yes, sleep even affects the hormones that control appetite) and your body and brain never get a chance to heal?

Even mild forms of impaired breathing during the night put your autonomic nervous system into a "fight or flight" state. This results in increased cortisol levels and creates an inflammatory environment in which the body and brain are not able to realize the needed benefits of sleep.

"With the Homeoblock, we are NOT treating Sleep Apnea, we are treating Autonomic System Dysfunction."

Dr. Ted Belfor - Inventor of the Homeoblock

I was fortunate to spend considerable time studying with Dr. Belfor, before he unexpectedly passed away in 2023.

The key to recovery - good breathing and good sleep! Here are just a few of the major symptoms we see in our patients who are sleeping poorly.

memory issues

During sleep, your brain forms connections that help you process and remember new information. A lack of sleep can negatively impact both short- and long-term memory.

mood changes

Sleep deprivation can make you moody, emotional, and quick-tempered. Chronic sleep deprivation can affect your mood and lead to anxiety or depression, which may escalate.

weakened immunity

Too little sleep weakens your immune system's defenses against viruses like those that cause the common cold and flu. You're more likely to get sick when you're exposed to these germs.

risk for diabetes

A lack of sleep affects your body's release of insulin, a blood sugar-lowering hormone. People who don't get enough sleep have higher blood sugar levels and an increased risk for type 2 diabetes.

low sex drive

People who don't get enough sleep often have a lower libido. In men, this decreased sex drive may be due to a drop in testosterone levels.

trouble with thinking and concentration

Your concentration, creativity, and problem-solving skills aren't up to par when you don't get enough rest.

accidents

Being drowsy during the day can increase your risk for car accidents and injuries from other causes.

high blood pressure

If you sleep less than five hours a night, your risk for high blood pressure increases.

weight gain

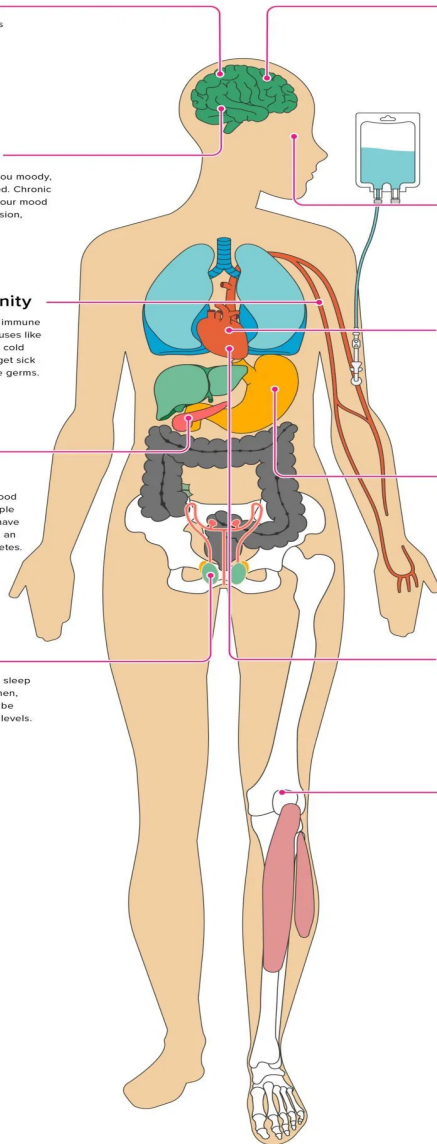
With sleep deprivation, the chemicals that signal to your brain that you are full are off balance. As a result, you're more likely to overindulge even when you've had enough to eat.

risk of heart disease

Sleep deprivation may lead to increased blood pressure and higher levels of chemicals linked to inflammation, both of which play roles in heart disease.

poor balance

Lack of sleep can affect your balance and coordination, making you more prone to falls and other physical accidents.



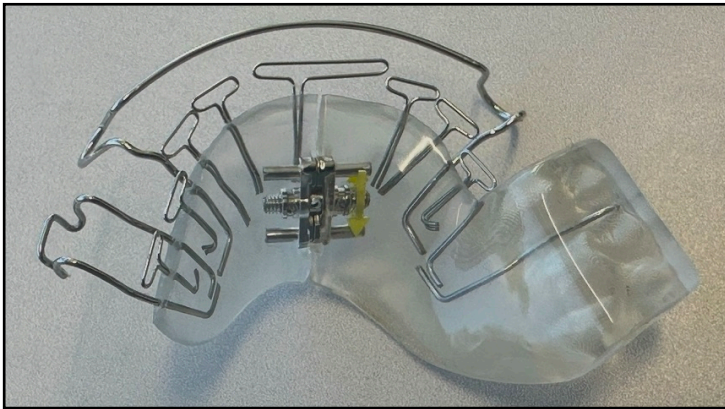
Treatment

The good news is, once we have your diagnostic records to evaluate your mouth, we also have all the records we need to move forward with treatment.

This treatment can vary considerably from patient to patient. One patient may have good skeletal structures and only require elimination of allergy provoking foods. Another may have severely deficient jaws that may require 2-3 years of therapy.

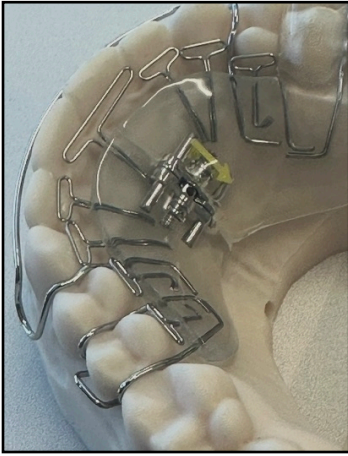
We never know for certain until all Airway Assessment records are taken and analyzed.

If appliance therapy is necessary, we are trained in a whole range of appliances. Whether it's a simple mandibular advancement appliance, a POD® (Preventive Oral Appliance) or a full epigenetic HomeoBlock™ appliance, we can perform the treatment that is right for you.



This simple, yet brilliant appliance is designed to apply light cyclical forces to stimulate the stem cells (found in the ligament around the teeth) **to produce more bone**. They are essentially **orthopedic** appliances (meaning they remodel bone) rather than **orthodontic** appliances that only move the teeth.

I can tell you from personal experience that this treatment is much more comfortable than traditional braces and the appliances are **VERY EASY** to wear!



Over time, the bone remodels and a “key” is used to turn a screw approximately once every 4 weeks. Each turn equals .25 mm of palatal expansion. If done consistently, this works out to a 1/4 of an inch in 12 - 18 months.

Considering that increasing the width of the palate by 20% allows for TWICE the amount of air to flow through your nasal passages, this is highly significant! It also makes more room for your tongue.

It is also important to note that turning the expansion screw **DOES NOT CREATE the expansion**, it merely allows the appliance to **KEEP UP** with the changes created as the bone remodels.

Because it is designed to allow your lower jaw to move freely, this appliance often immediately makes patients breathe and feel better. It is more comfortable than a Mandibular Advancement appliance and WAY more tolerable than a CPAP.

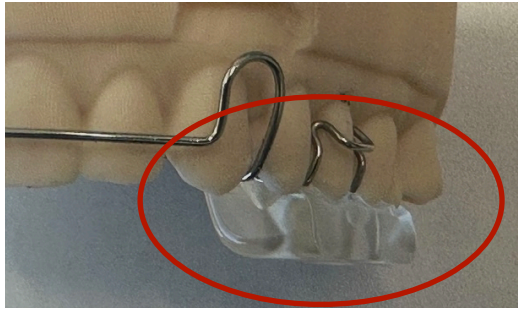
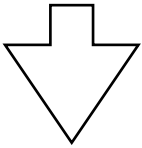
If you are already a CPAP user, we recommend you DO NOT discontinue its use! This appliance can be worn in conjunction with your CPAP. Stay in communication with your current sleep physician about if and when to transition off your CPAP.

IMPORTANT NOTE: With the use of an orthopedic oral appliance you will be experiencing changes in the position of both the bone as well as the teeth. That means you may notice your bite changing or the shifting of teeth (most commonly opening of small spaces due to expansion). **This is a good thing and exactly what we are trying to achieve!** Because we now have an orthodontic clear aligner system that is designed to help with your airway, we include orthodontic therapy in your treatment plan if it helps us achieve a more optimal result. I'll discuss that in more detail shortly.

The Uniblock Design ... a “1-2-3 Punch”

The benefits of the HomeoBlock appliances (and the POD) go way beyond the bone remodeling that takes place over a 12 - 24 month period. There is a reason a majority of patients using these devices see almost immediate results.

**IN A
MATTER OF**



MINUTES

1. It down-regulates the Autonomic Nervous System.

Note, in the appliance I am currently wearing, I am only making contact on one side. **This simulates chewing on hard food.** From an evolutionary standpoint, this signals your body that you are not under any immediate danger and prepares the body for digestion - a **parasympathetic** (“Rest & Digest” state). Generally Heart Rate Variability (HRV) numbers improve when wearing this type of appliance. I expected my Homeoblock to be uncomfortable. Instead, it is strangely **soothing!**

DAYS

2. It tones the muscles of the tongue.

The HomeoBlock appliance forces you to swallow correctly and place your tongue on the roof of the mouth. Because of the extra 4-5 mm of space the tongue has to travel, it, as Dr. Ted Belfor put it, “takes your tongue to the gym”. This reduces the collapsibility of the airway.

MONTHS

3. It remodels bone.

As it simulates the chewing on hard food, it also signals your DNA to express itself differently. Epigenetic tags on your DNA responds to the light signaling forces by remodeling and growing bone.

“Patient Centered” Orthodontics

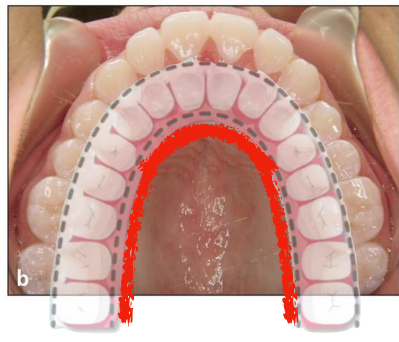
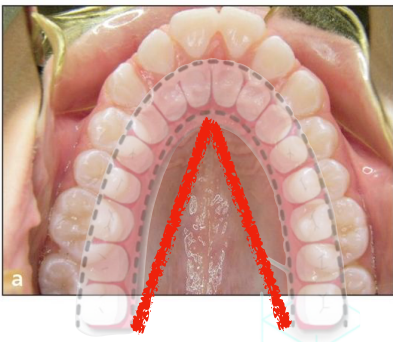
Traditionally, orthodontists have been major **contributors** to airway problems. Why? Well, what prompts someone to see an orthodontist in the first place? That’s right ... crowded teeth, an indicator of an under-developed jaw. Their solution often was just to pull (generally the 4 first bicuspid) teeth. A similar solution used with clear aligners (like Invisalign®), is called IPR (Inter-**P**roximal **R**eduction), where healthy tooth structure is removed to “slim” the teeth.

Unfortunately, both extraction orthodontics and IPR further **constrict** the arch (and airway), making a bad problem even worse!

Enter ProMonitoring!

An exciting new era in orthodontics. Developed in collaboration with an “Airway” dentist, this aligner system is all about developing proper arch form and creating **more** room for the tongue.

Because this aligner treatment is designed to improve the **shape** of the arch as well as the **position** of the teeth, it is now an integral part of our airway program.



Note the difference between a constricted **V-shaped** arch on the left and a more airway friendly **U-shaped** arch on the right. Through a combination of treatment with the Homeoblock and ProMonitoring aligners, we can achieve this result!

Game Changing Technology

What's great about this new clear aligner system is not just how it perfectly complements our airway program, but also how easy and convenient it to use.

There have traditionally been a number of shortcomings to systems like Invisalign or SureSmile:

1. **Attachments** - little buttons made out of white filling material bonded to the surface of the tooth to facilitate tooth movement. These are not very comfortable and can make insertion and removal of the trays out difficult.
2. **IPR** - Grinding away tooth structure in between the teeth to help with crowding. These moves teeth into an improper upright position.
3. **Multiple office visits** - to monitor the progress of tooth movements
4. **Refinements** - over 90% of traditional clear aligner cases need additional aligners to finish the case. Just when you think you are done, you find out you need another 3-4 months of treatment.
5. **Cost** - fees for a comprehensive cases can be up to \$8,000

ProMonitoring has done a remarkable job of addressing all of these problems!

With no need for attachments or IPR, it is often not even necessary to come to the office to get your aligners (they can be shipped right to your house). Once treatment starts, you simply use your phone (with the supplied clip-on attachment) and do a quick scan of your teeth.



The AI app then determines if the teeth are moving as expected and let's you know if you are ready to move on to the next set of aligners. Best of all, with fewer office visits, we can make this treatment more affordable than ever!

Wait, that's NOT even the best part. The system also includes a tooth whitening solution, so that you end up with a smile that is both healthy AND beautiful.

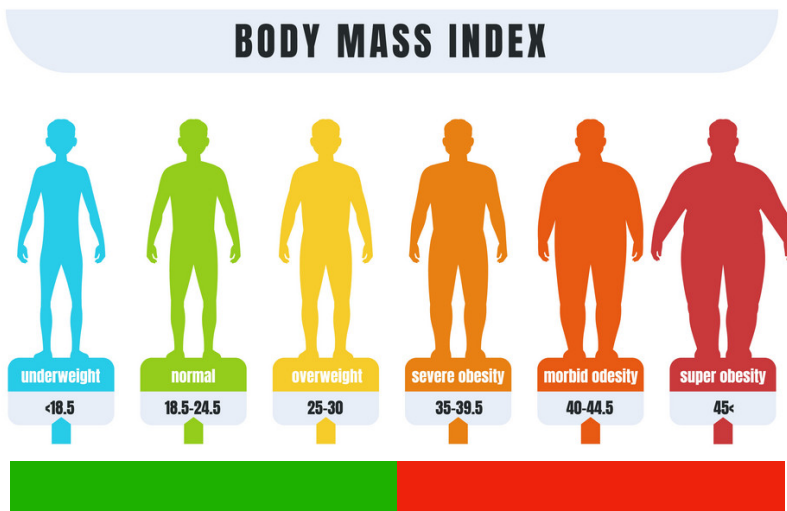
After seeing what ProMonitoring can do, I am going through this treatment myself (as are a number of team members) and we are loving it!

Adjunctive Therapies

Think of your airway as a hose running from your nostrils to your lungs. Since **nasal breathing (100% of the time!) is absolutely critical to good health**, it is important that every part of the airway allows for proper airflow. Just like a hose, if any part has a kink, the air won't get through.

Solving the airway puzzle takes a multifaceted approach. Some cases are much more complex than others and for this reason we often employ the use of other medical practitioners in order to achieve optimal results.

1. **Allergist** - allergies, both environmental as well as dietary are quite common and cause the swelling of nasal tissues. It is critical to reduce the size of the turbinates in order to achieve proper airflow.
2. **Nutritionist** - excess body mass can impinge on airway. In many cases full resolution of airway issues can not be resolved until the BMI is below 30.



Every 1 point rise in BMI increases the risk of Obstructive Sleep Apnea by 12%

If you want to quickly calculate your BMI, go online, search “BMI Calculator” and choose **Calculator.net**. I just entered my info ... hmmm, looks like I need to lose a couple of pounds!

BMI Calculator

US Units

Metric Units

Other Units

Age ages: 2 - 120
 Gender ☒ Male ☐ Female
 Height feet inches
 Weight pounds

Calculate

Clear

Result

BMI = 25.6 kg/m² (Overweight)

- Healthy BMI range: 18.5 kg/m² - 25 kg/m²
- Healthy weight for the height: 148.0 lbs - 200.0 lbs
- Lose 5.0 lbs to reach a BMI of 25 kg/m².
- Ponderal Index: 13.5 kg/m³

- Chiropractor** - many times, patients tell me that they go to the chiropractor on a regular basis, but the adjustments “just don't hold”. If there's an airway problem, the head will often be carried in a different position in order to allow for optimal airflow. For this reason we like to work with a chiropractor who is trained in the breathing / posture relationship. **Their therapy makes our airway treatment even more effective!** More on this later . . .
- Physical Therapist** - Carrying the head in a non-centered (off balance) position results in muscle strain that can result in neck, shoulder and back pain. Once the airway is addressed, PT can be highly effective in reducing these symptoms.

“In order to get oxygen, your body will sacrifice anything it needs to survive — your teeth (clenching/grinding), your TMJ, your cervical vertebrae...” Dr. Ted Belfor

5. **NightLase** - With our state of the art Fotona LightWalker laser, we are able to treat several area that can lead to reduced airflow. The soft palate (back of the roof of the mouth), floor of the mouth and tongue are all treated with the new C3 protocol. By tightening and lifting these tissues, we can often improve airflow and reduce snoring in as little as 1 or 2 appointments.



Before



After



NightLase®

Courtesy of: Jaana Sippus Hannele, DDS, M.Sc.

Laser source: Fractional Er:YAG

“Wow After the laser I can breathe through my nose today with my mouth closed. I haven’t been able to do that in years. I’m over the moon with happiness!”

★★★★★ TINA F., PHOENIX, AZ

6. Tongue tie release

Tongue ties are one of the major contributors to airway problems. As I learned more about this condition, I was actually shocked that this is something very few dentists are aware of. In fact, it is so important, that I took both of my associate doctors to a conference on tongue ties in February of 2022 (Yes, there really are entire conferences devoted to this subject!)

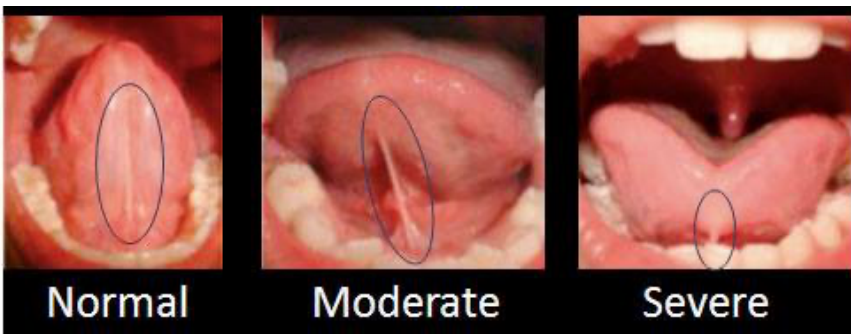
Here is why tongue ties matter ...

First, tongue ties do not allow for a newborn to get the tongue into a position to properly breastfeed. As a result, two things happen:

- a. The infant does **not receive the proper nutrition** that can only be derived from the mother's milk.
- b. Because bottle-feeding is a passive process, there is **lack of proper development** of the structures of the head and neck (this is a HUGE problem and exacerbated by a soft Standard American Diet!)

Secondly, tongue ties cause a “reverse swallow”. This means every time a child swallows, about 2500 times a day, there is an abnormal tightening of the lip muscles. As a result of this INWARD pressure on the lips, the teeth get pushed inward as well. **This results in dental crowding and less room for the tongue.**

Finally, improper tongue position as a result of a tongue tie does not allow the tongue to rest on the roof of the mouth. This results in an improperly formed “vaulted” palate. The problem is, the roof of the mouth is the floor of the nose. As the palate rises, it reduces the volume of the airway and restricts airflow.



Myofunctional Therapy

Myofunctional therapy is essentially an exercise training program for the muscles around your face, mouth, and tongue. In the past, these exercises were primarily designed to help children improve issues with speech and eating issues. More recently they have also been found to be highly effective in aiding in the treatment of airway issues.

The main purpose of Myofunctional Therapy is to:

1. Achieve proper nasal breathing
2. Correct tongue posture
3. Attain proper lip seal
4. Correct abnormal swallowing patterns



It is critical for all of the muscles of the head and neck area to be working together properly. I remember one of my instructors in dental school saying “when muscle fight bone, the muscles always win”. Problems with improper muscle function is one of the root cause of airway problems. By addressing these issues, we reduce the chances of relapse (like in orthodontic therapy if you don’t wear you retainer).

If you can benefit from this treatment, I am happy to tell you that we are in the process of offering myofunctional therapy right here in the office and also have practitioners that we can refer you to.

To learn more, go online. There are numerous resources to learn more about this highly effective therapy.

Chiropractic Treatment

One of the basic principles of our practice is to get to the “why” of a problem. This is especially important when it comes to solving airway related problems.

In this regard, proper breathing and posture are often overlooked. That is why working in conjunction with a properly trained Chiropractor or Physical Therapist can be highly beneficial to treating the root cause.

Patients with a compromised airway often adopt a “head forward” posture in order to maintain better airflow. That means muscles, designed to balance the head, now have to work much harder to keep the head upright. For every inch your head is out of alignment, those muscles have to carry an extra 10 pounds of weight! In the long run, this results in muscle tension and ultimately neck and back pain.

Imagine you had a poorly performing car, but did not realize the wheel alignment was off. While performance would improve by working on the engine, you would never achieve optimal results if you did not address the wheel alignment problem as well.

The same is true with your body. Airway and postural problems are closely connected. So close in fact, that we often wonder which problem came first!

Ideally, you want to work with a physical therapist or a PRI (**P**ostural **R**estoration **I**nstitute) trained chiropractor. These practitioners are generally more aware of the posture / airway relationship.

By using gentle, therapeutic adjustments and breathing-based exercises, they are able to reduce pain and improve mobility. This allows them to achieve postural improvements that are much more stable than traditional chiropractic treatments and prevent the need for endless visits!



What You Can Do

Because we are actually growing bone with these unique epigenetic appliances, it is critical to give your body the building blocks to do so. Fortunately, this treatment is tailor made for the patients of a holistic dental practice. Chances are you are ready eat a healthy diet and do the things I'm about to talk about

1. **Eat a bone building diet** - by giving your body the building blocks to make bone, treatment progresses significantly faster. One of the best ways to do this are bone broths. I like using organic chicken or beef marrow bones.



I had some left over broth in a bowl in the refrigerator. This is how gelatinous it was! Good stuff - both for building bone (amino acids) and boosting your immune system (precursors for Glutathione).

2. **Drink Green Smoothies** - also essential for achieving optimal results. I consider green drinks to be essential to my health and they have been a part of my diet for over 20 years. I start almost every morning with a product called Living Fuel.



My Recipe:

Add organic frozen blueberries to fill a 16 oz. cup half way. Add water to cover. Add one scoop each of Living Fuel Supergreens and Superberry. Add 1 tablespoon of Almond butter and any other supplements as desired (make sure they don't taste bad). Add more water to fill to 1/2" below rim. Use a blender stick (Bamix) to blend. Add more water if needed to achieve desired consistency.

Monitoring

If you have sleep issues or are planning on going through with treatment for your airway condition, **you may want to invest in a sleep tracker**. I recently tried both the OURA Ring and the WHOOP Band (Apple Watch and FitBit also have a sleep tracking feature). I am amazed at the level of information it can provide. It is almost like doing a mini sleep study every night!



Monitoring your sleep with these devices gives us some feedback to see if your therapy is working properly.

NOTE OF CAUTION: I found some fairly major variance in readings when I wore multiple devices at the same time. As long as you are comparing “apples to apples” and consistently using the same device, the data can be very useful.

If you decide to purchase an OURA ring (\$300), we do have a sizing kit at our office to help you pick out the proper size for your finger.


Treatment for Kids

The whole reason I got into treating airway patients in the first place was because I was concerned about my young daughter. After all, why wait until adulthood to address problems that have existed since childhood?

We have a number of options available to us to address breathing issues in children. **Unfortunately we have also discovered that getting our youngsters to wear an oral appliance is NOT easy!** That's why seeing a Myofunctional Therapist or a Speech Language Pathologist is often a much more effective way of getting kids on the road to better health.


If you suspect your child may be suffering from poor breathing or sleep, PLEASE, let us know! We can do a comprehensive evaluation to determine proper treatment

HealthyStart is just one of the programs we consider to treat airway problems at an early stage (Myobrace and ToothPillow are two others). By developing proper habits and tongue position, proper jaw growth and facial development are naturally encouraged.



Early Treatment is Crucial

ADD/ADHD	Bedwetting
Lower IQ	Nightmares
Chronic Allergies	Dark Circles
Aggressive Behavior	Snoring
Mouth Breathing	Irritability
Crooked Teeth	Arrested Growth
Restless Sleep	Headaches

 healthystart.

If your child, or a child you know, has any of the above symptoms, please, have them schedule an appointment for a comprehensive assessment. Statistics show that 9 out of 10 children have some degree of sleep disordered breathing!

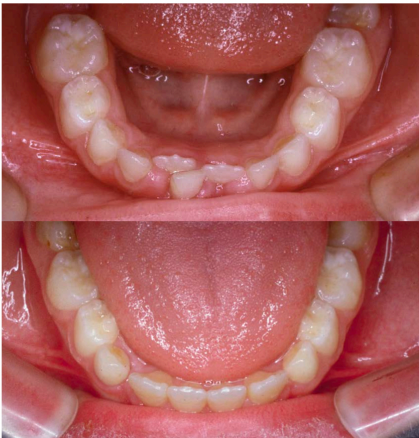
While extremely common, it is NOT normal.

In the past, we used to tell parents, “Your child will grow out of it”. **Unfortunately that is ALMOST NEVER the case. Between the ages of 4 and 12, over 90% of the symptoms did NOT resolve and 30% got worse.**

HealthyStart works by:

1. Facilitating proper oral rest posture (breathing through nose, lips gently sealed, tongue on the roof of the mouth).
2. Encouraging palatal expansion (1-3mm) due to the tongue pressing on the palatal tabs of the appliance with correct swallowing technique.
3. Eliminating mouth breathing by preventing the mandible from falling back.
4. Lingual prongs help correct tongue thrusts by gently reminding the tongue where it should and should not be.

By encouraging proper jaw development, it gives the teeth sufficient room to erupt into the proper position and a number of common conditions, such as crowding, underdeveloped jaw and overbites can be corrected without orthodontic intervention.



90% of kids on HealthyStart end up NOT needing braces!

While the HealthStart system has proven to be effective in many cases, working with children presents a number of challenges.

For one, many children suffering from poor breathing have contributing factors that are structural (tongue ties for example) and functional (such as a tongue thrusting habit) in nature. Another is the ability of young children to be able to comply with the recommended treatment.



For this reason, we work closely with Jeannie Nelson, who is both a Speech Language Pathologist as well as a Myofunctional therapist.

After doing a thorough structural and functional evaluation (and using our office's advanced imaging technology), she uses her years of experience to formulate a treatment plan that will produce the most optimal outcome.



Speech Therapy



Craniosacral Fascial Therapy



Orofacial Myofunctional Therapy

Breathing and sleeping issues usually start at an early age. **By providing adequate sleep and oxygen, kids can thrive!**

Frequently Asked Questions

At this point you probably have a whole slew of questions - this section should answer most of them.

How many hours a day does the appliance need to be worn?

Ideally 7 - 8 hours at night. The appliance is only worn at night while you sleep.

Is the appliance comfortable?

YES! You will quickly get used to your new prosthesis. In fact, because of the immediate benefits (such as reduction in pain and improved sleep), most patients don't want to part with after they start using it.

Are there any side effects?

Some patients report an increase in salivation with the appliance in place. This usually subsides after a short time.

Can I talk while wearing the appliance?

It varies between individuals, but your speech will be affected. The good news is, this appliance only has to be worn at night.

How long will the treatment take?

Anywhere from 12 - 18 months. There is no way to determine the length of treatment until the information from the Airway Assessment appointment has been evaluated. Treatment time also greatly depends on the complexity of the case and the level of compliance.

Is any other treatment necessary?

In some cases we will need to work in conjunction with other practitioners. A minor surgical treatment to release a "tongue tie" is frequently necessary. This can be done right in our office using a laser.

Do I need to change my diet?

Possibly. Even though chances are that you already eat well, you will be given information on adding the specific nutrients needed to build the bone required to remodel your jaw and airway.

What Will All This Cost?

Fees can vary somewhat depending on the complexity of your case. We will go over the fees for your case at a consultation after your Airway Assessment appointment,

In general, fees are similar to the cost of orthodontic treatment (like Invisalign) and can range from **\$5,000** to **\$8,500**. This includes ALL follow-up visits, as well as imaging and sleep tests. There may also be some additional fees for surgical procedures done in our office (such as a tongue tie release or chiropractic therapy) or at the office of an oral surgeon (such as removal of bony tori).

In all cases we will communicate all of the fees to you in advance so there will be no surprises.

Is This Covered By Insurance?

Insurance companies are always challenging to deal with, **especially** when it comes to newer, cutting edge treatments. This is especially true in the area of adult orthodontics and sleep apnea related devices. For this reason insurance will mostly likely not cover treatment using these advanced epigenetic oral appliances.

We do however offer a number of options to make treatment affordable for you.



"I said, it's the only hearing-aid covered by your insurance."

Final Thoughts

I can't even begin to tell you how excited we are to be able to offer this service to you.

It's hard to believe that it has taken the dental profession this long discover airway issues to be at the root cause of so many medical problems. It all makes perfect sense though once your eyes are opened.

It has taken a substantial investment in both time and equipment to be able to get to the point, so it is understandable why so many dentists are reluctant to go down this path.

I also understand that this will require a substantial investment on your part.

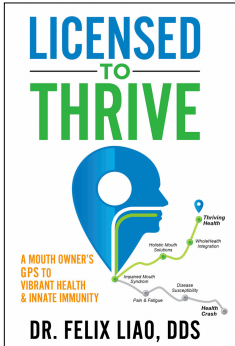
This program is not for everyone, but I know that if you share our philosophy of achieving optimal health, you don't just want to put a Bandaid® on the problem, you want to fix it!

**In the long run, the benefits you reap from
better health will be well worth it!**

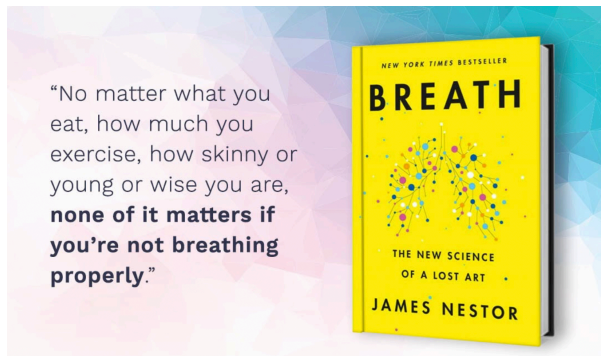


HIGHLY Recommended Reading

This book is only designed to give a brief overview of our airway program. If you want to learn more, the books below are an excellent place to start.



You can get both of these books at our office or on Amazon. It is also available on Amazon (Free if you have a Prime membership). *Breath* is a well written and extremely informative book by James Nestor. **I consider it to be essential reading for anyone with breathing issues.**





Online resources:


1. www.mrjamesnestor.com/breathing-videos
2. The *FOR PATIENTS* section on Dr. Ted Belfor's website: drtheodorebelfor.com
3. Dr. Matthew Walker - excellent articles, books and videos on the benefits of sleep


Our Website


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THOROUGH & COMPREHENSIVE AIRWAY ANALYSIS

Going the Extra Mile to Find the Right Treatment for You



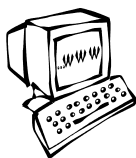
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Dr. Ingo Mahn, DDS, AIAOMT

Marquette University School of Dentistry '85

Doctor of Integrative Medicine

Airway Mouth Doctor

