

## Personalizing Treatment for Sleep-Related Breathing Disorders

Using the Lamberg Protocol for diagnosis of specific cause(s) and selection of the most appropriate treatment(s)

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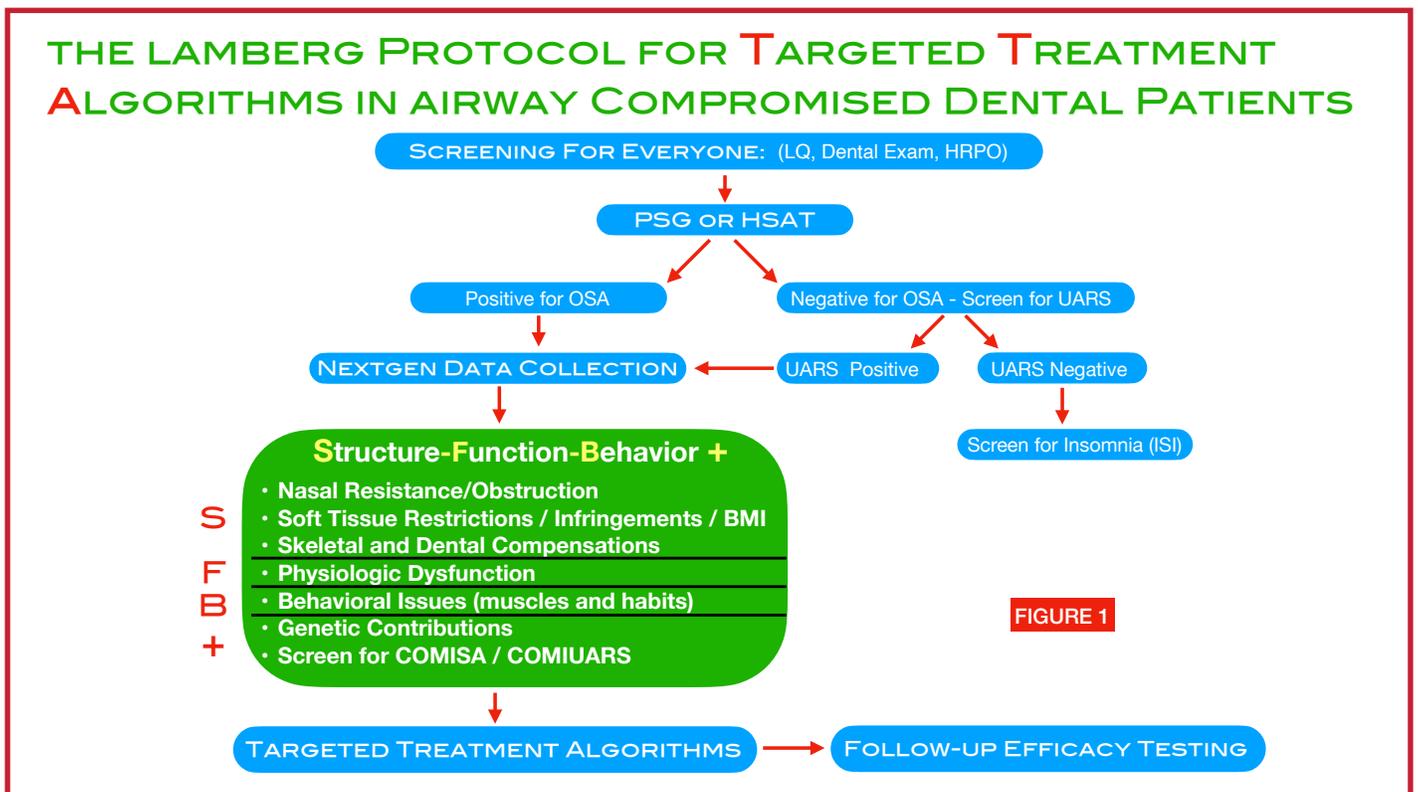


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**D**entistry plays a vital role in modern healthcare today, focusing on both oral health and its connection to overall well-being of the individual. Furthermore, dental professionals are increasingly recognized for their ability to identify and address systemic health issues.

Personalized oral and dental care interventions emphasize disease prevention through individualized rather than population-based surveillance, improve diagnosis through more accurate data collection and evaluation, promote earlier detection of abnormalities which helps to avoid further more invasive and expensive treatment, and reduce side effects of mistreatments and delayed treatment.

In most contemporary cultures, diet, exercise, sleep, and breathing are recognized as the essential pillars of overall health and well-being. They are interconnected and influence each other, impacting physical and mental health. As the



**1: TRADITIONAL SCREENING QUESTIONS**

- Do you awaken unrefreshed or feel sleepy during the day due to restless sleep?
- Is your snoring loud enough to disturb others?
- Have you been aware of your snoring for a long time?
- Have you been told your breathing stops while asleep?
- Do you ever wake yourself from sleep feeling that you are choking?
- Have you ever had a sleep study?
- Have you tried CPAP? (Was the pressure > 10.5 cm? Y/N)
- Is your BMI > 27? Is your neck > 17" for a man, or > 15.5" for a woman?
- Do the edges of your tongue have a scalloped pattern?
- Is your waist/height > .55?

**2: CARDIOLOGY & VASCULAR MEDICINE**

- Do you have high blood pressure or take medicine for hypertension?
- Have you been diagnosed with CAD, stroke, congestive heart failure, Afib, other heart health issues, or syncope?
- Do you have a pacemaker?
- Do you have elevated total cholesterol levels?

**3: PULMONOLOGY**

- Have you experienced difficulty breathing during the day?
- Do you have shortness of breath, even with mild exertion?
- Have you been diagnosed with COPD, asthma, or pulmonary hypertension?
- Is asthma worse at night?
- Do you have a chronic cough, either dry or productive?

**4: GASTROENTEROLOGY**

- Have you or your dentist noticed erosion on molars?
- Do you experience heartburn or acid reflux at night or when you awaken in the morning?
- Do you take heartburn medications, either prescription or OTC?

**5: NEUROLOGY**

- Do you experience numbness, tingling or pain in your feet or hands or head?
- Do you ever experience leg cramps at night?
- Do you ever experience muscle weakness or dizziness or difficulty with coordination?
- Have you ever been diagnosed with Alzheimer's or dementia?

**6: ENDOCRINOLOGY**

- Have you been diagnosed with diabetes or hypothyroidism?
- Have you unexpectedly gained or lost weight lately?
- Have you gone through menopause? Are you on HRT?
- Have you been diagnosed with low testosterone?
- Do you experience repetitive limb movements or jerks in sleep, urges to move legs, night sweats, or leg cramps?

**7: OTOLARYNGOLOGY**

- Do you have difficulty breathing through your nose?
- Do you experience a dry mouth upon awakening?
- Do you have allergies that make nasal breathing difficult?
- Is postnasal drip a frequent problem?

**8: UROLOGY**

- Do you experience erectile dysfunction?
- Do you experience decreased interest in sex or have you taken medications to enhance sexual performance?
- Do you ever leak urine involuntarily?
- Do you have to urinate several times at night, or have you been diagnosed with BPH?

**9: DENTISTRY**

- Do you grind your teeth while sleeping?
- Do your front teeth have a worn look?
- Have you had jaw muscles or joint pain, ringing in your ears, vertigo, or dizziness?
- Have you been diagnosed with periodontitis (gum disease)?
- Are your teeth crowded or crooked or jaws misaligned?

**10: PSYCHOLOGY & PSYCHIATRY**

- Are you irritable upon waking in the morning?
- Do you experience insomnia? (falling asleep or maintaining sleep)
- Do you experience depression, anxiety, PTSD, memory or concentration problems?
- Do you take medications for any of these conditions?

**11: RHEUMATOLOGY**

- Have you ever been diagnosed with gout?
- Have you ever been diagnosed with rheumatoid arthritis?

**12: DERMATOLOGY**

- Have you been diagnosed with atopic dermatitis (eczema) or

**13: OPHTHALMOLOGY**

- Have you been diagnosed with floppy eyelid syndrome, chronic eye irritation, dry eye syndrome, glaucoma, nonarteritic anterior ischemic optic neuropathy, papilledema, keratoconus, central serous chorioretinopathy, or macular edema?
- Are you taking antivasculor endothelial growth factor medications for retinal disease?

**14: CHRONIC PAIN**

- Do you often wake up with headaches or have chronic headaches?
- Do you experience any chronic pain anywhere in your body?
- Do you take medications for pain on a daily basis?

**15: HEPATOLOGY**

- Have you ever been diagnosed with nonalcoholic fatty liver disease?

**16: ONCOLOGY**

- Have you ever been diagnosed with cancer?

**17: OBSTETRICS (GESTATIONAL OSA)**

- In pregnancy: Are you 35 or older or is your BMI>25?
- Do you feel fatigued, experience nasal congestion, or have you started to snore?
- Has your BP or blood sugar increased significantly?

**18: NEPHROLOGY**

- Have you been diagnosed with kidney disease?

**19: PEDIATRICS (EXCLUDE FROM SCORING)**

- Do you know any children who are mouth breathers, have large tonsils, or who make any sleep breathing sounds?
- Do you know any children with bedwetting problems?
- Do these children have a crossbite or convex facial profile?

FIGURE 2a

**LAMBERG QUESTIONNAIRE**

**The Role of Snoring & Sleep Apnea  
in Contemporary Preventive Medicine**

*Treat the Cause... Treat the Airway*



**Treat the Airway**

**Steven Lamberg, DDS, DABDSM**

**OVER 170 Medical Conditions  
Associated with Snoring and Sleep Apnea**

Steven Lamberg, DDS, DABDSM

FIGURE 2b

craniofacial respiratory complex encompasses the structures of the head, face, and oral cavity, and alterations in these structures can directly impact breathing, dentistry finds itself in a unique position to work with the medical community, in a transdisciplinary fashion, to prevent and treat sleep related breathing disorders which affect the overall health of so many people worldwide today. Sleep related breathing disorders comprise a continuum of conditions from snoring and upper airway resistance syndrome to severe obstructive sleep apnea. Additionally they include central sleep apnea and sleep-related hypoventilation disorders.<sup>1</sup>

Obstructive sleep apnea (OSA) is a sleep disorder characterized by repetitive episodes of partial or complete obstruction of the upper airway during sleep despite ongoing respiratory efforts. This results in fragmented sleep and intermittent hypoxia.<sup>2</sup>

Although this disorder is estimated to affect 17% of middle-aged women and 34% of middle-aged

men<sup>3</sup>, a more recent assessment in PubMed and Embase search was used to identify published studies reporting the prevalence of obstructive sleep apnea. This is the first study to report global prevalence of obstructive sleep apnea; with 1 billion people affected, and with prevalence exceeding 50% in some countries. More effective diagnostic and treatment strategies are needed to minimize the negative health impacts.<sup>4</sup>

For the individual patient, the primary goals for treating sleep related breathing disorders, including OSA, include the following: reduction of health risks associated with breathing disorders, improvement of sleep quality, a decrease in daytime sleepiness and the reduction or elimination of snoring.

As OSA is a sleep related breathing disorder with a high prevalence of comorbidities as well as diverse clinical manifestations and phenotypes, conventional approaches to diagnosis and treatment of OSA are no longer the most effective approach. The debate about what is the best primary treatment between

CPAP or OAT was argued at the 2025 AADSM annual meeting and the FLOSAT results were shared prior to publication.<sup>5</sup> Novel approaches to measuring the hypoxic burden were also presented including Sleep Apnea Specific Hypoxic Burden “SASHB.” The problem with all of this is that the cause(s) of the disease is not being diagnosed. The only path to optimize treatment of this disease begins with diagnosing the cause for the individual, which is a philosophical shift towards a more personalized approach. The Lamberg Protocol is a treatment algorithm based on addressing the compensations and cause(s) of the disease as a prerequisite to treatment.

This article outlines a workflow from a more proactive screening protocol, because approximately 80–90% of OSAS cases remain undiagnosed<sup>6</sup>, to a novel “Nextgen” data collection protocol<sup>7</sup> which leads to a diagnosis of the cause(s) and recommendations for treatment. It is only when the cause(s) of the SRBD problem is revealed that individualized treatment can be selected for the patient.

This approach is consistent with what Peter Attia refers to as the transition from Medicine 2.0, treating the acute conditions, to Medicine 3.0. Medicine 3.0 reflects a move towards evidence informed vs. evidence based guidelines, adoption of early preventative measures for potentially chronic conditions, and a highly personalized approach to the overall health of an individual patient.<sup>8</sup>

Dentistry 2.0 is transitioning to Dentistry 3.0 as well. The concept of Orthodontics 3.0 was recently presented by Mike DeLuke DDS, MDS in New York.<sup>9</sup> The concept includes examining each patient as an individual rather than an average. Orthodontics 3.0 goes beyond looking at the teeth and includes examination of the face, tongue, airway, behavior and sleep quality. Finally this perspective acknowledges the risk of doing nothing (ie “watchful waiting”).

## SCREENING PEDS

**Lamberg Questionnaire for Pediatric Airway and Sleep "LQ-PAS"**  
A Risk Assessment Tool for Pediatric Airway and Sleep

	Yes	No	Don't Know
<b>While sleeping, does your child...</b>			
Have trouble breathing or struggle to breathe?			
Stop breathing during the night?			
Have "heavy" or loud breathing?			
Snore regularly?			
Snore loudly?			
Snore more than half the time?			
Appear to be a restless sleeper?			
Child kick during sleep?			
Have nightmares?			
Scream in their sleep?			
Grind their teeth during sleep?			
Sleepwalk?			
Occasionally wet the bed?			
<b>Upon awakening, does your child...</b>			
Have a dry mouth in the morning?			
Tend to breathe through the mouth during the day?			
Wake up feeling un-refreshed in the morning?			
Have a problem with sleepiness during the day?			
Have trouble getting going in the morning?			
Wake up with headaches in the morning?			
<b>We have noticed that our child...</b>			
Does not seem to listen when spoken to directly?			
Has difficulty organizing tasks?			
Is easily distracted by extraneous stimuli?			
Fidgets with hands or feet or squirms in seat?			
Interrupts or intrudes on others (e.g. butts into conversations or games)?			
Has a teacher or other supervisor comment that your child appears sleepy during the day?			
Has been diagnosed with ADD or ADHD?			
<b>Additionally...</b>			
Did your child stop growing at a normal rate at any time since birth?			
Is your child overweight?			
Does your child's teeth seem crooked or misaligned?			
Does your child have allergies?			
Does your child have frequent colds?			
Does your child have difficulty with pronunciation?			

**FIGURE 3**

## SCREENING PEDS "ARFs" (Airway Red Flags)

Signs	Symptoms
<input type="checkbox"/> Lips apart at rest (open mouth posture)	<input type="checkbox"/> Speech problems
<input type="checkbox"/> Mouth breathing	<input type="checkbox"/> Poor eating and swallowing
<input type="checkbox"/> Lip Incompetence	<input type="checkbox"/> Parafunctional habits
<input type="checkbox"/> Lip strain when lips together	<input type="checkbox"/> Lower jaw set further back than upper jaw (Underbite)
<input type="checkbox"/> Swollen adenoids and tonsils	<input type="checkbox"/> Eye shiners (dark circles under the eyes)
<input type="checkbox"/> Forward Tongue Resting Posture	<input type="checkbox"/> Bags under eyes
<input type="checkbox"/> Tethered Oral Tissues	<input type="checkbox"/> Scalloped tongue
<input type="checkbox"/> Restricted Lingual Frenulum	<input type="checkbox"/> Arrested growth
<input type="checkbox"/> High Narrow Palate	<input type="checkbox"/> Poor Facial Symmetry
<input type="checkbox"/> Crusty and dry lips and/or mouth	<input type="checkbox"/> Narrow Posterior Airway Space (on ceph)
<input type="checkbox"/> Narrow smile	<input type="checkbox"/> Nasal Resistance (CBCT)
<input type="checkbox"/> Long Face Height	<input type="checkbox"/> Vertical Position of the Hyoid (should be C4, higher or lower not good) Ceph or CBCT
<input type="checkbox"/> Flattened Cheeks	<input type="checkbox"/> Other _____
<input type="checkbox"/> Maxilla retruded	
<input type="checkbox"/> Weak Chin (lower jaw retruded)	
<input type="checkbox"/> Crowded/Crooked teeth	
<input type="checkbox"/> Crossbite and open bite malocclusions	
<input type="checkbox"/> Excessively worn teeth	
<input type="checkbox"/> Gummy Smile	
	<input type="checkbox"/> Difficulties breastfeeding
	<input type="checkbox"/> Dysphagia
	<input type="checkbox"/> Snoring
	<input type="checkbox"/> Tooth grinding
	<input type="checkbox"/> Coughs, Colds, and Chest infections
	<input type="checkbox"/> Chronic allergies
	<input type="checkbox"/> Nasal Congestion
	<input type="checkbox"/> Snoring and fatigue
	<input type="checkbox"/> Asthma symptoms
	<input type="checkbox"/> Cognitive communication deficits
	<input type="checkbox"/> Poor academic performance
	<input type="checkbox"/> Language delays
	<input type="checkbox"/> Frequent headaches
	<input type="checkbox"/> Frequent nightmares
	<input type="checkbox"/> Bed Wetting
	<input type="checkbox"/> Child behavioral disorders
	<input type="checkbox"/> Aggressive behavior
	<input type="checkbox"/> Irritability
	<input type="checkbox"/> Possible dx of ADD or ADHD
	<input type="checkbox"/> Restless Sleep

**FIGURE 4**

## SCREENING PEDS

### Pediatric Airway and Sleep Referral

Date: \_\_\_\_\_

Patient Name/DOB: \_\_\_\_\_ Physician: \_\_\_\_\_

Address: \_\_\_\_\_ Physician Phone: \_\_\_\_\_

Phone: \_\_\_\_\_ Physician Fax: \_\_\_\_\_

**Specialty Evaluation Requested by:** ENT, Allergist, Oral Surgeon, Orthodontist, Myofunctional Therapist, Speech/Language Therapist, Neurologist, Dietician, Pediatric Dentist, General Dentist, Psychologist, Sleep Specialist including (Initial consultation, Polysomnogram as necessary, and follow-up)

**Overnight Attended Sleep Study/Polysomnogram**

**Reason for referral:** \_\_\_\_\_

**Medical History and Pertinent Physical Exam Findings:** \_\_\_\_\_

The targeted treatment algorithms in airway compromised dental patients is The Lamberg Protocol. (See figure 1) It is based on addressing specific structural, functional and behavioral compensations and cause(s) of the airway problem rather than the severity index based on frequency of respiratory events, or hypoxic burden during sleep.

The workflow begins with the Lamberg Questionnaire “LQ” (See figure 2a) for all adults, which is explained in the book, “Treat the Cause...Treat the Airway” (See figure 2b). Children are given the Lamberg Questionnaire of Pediatric Airway and Sleep “LQ-PAS” (see figure 3,4) When sufficient risk is revealed on the LQ score, the patient is referred for a PSG or HSAT. If the PSG or HSAT is negative for OSA, the patient is evaluated for UARS which is frequently overlooked as RERAs are underestimated in PSG studies and esophageal pressure sensors are infrequently used in clinical laboratory settings.<sup>10</sup>

Upper Airway Resistance Syndrome “UARS” cannot be overlooked as it may be responsible for health consequences equivalent to or worse than

OSA. Untreated UARS can lead to several negative health outcomes including reduced quality of life, increased risk of cardiovascular diseases, hypertension, T2DM and various mental health issues. It can also cause persistent insomnia, daytime fatigue, cognitive impairment and chronic somatic disorders like chronic fatigue syndrome, fibromyalgia and IBS. UARS is defined in general as airflow limitation due to increased respiratory effort leading to arousals from sleep without significant desaturation (i.e., RERAs) associated with daytime symptoms.<sup>11</sup> UARS has also been more specifically defined as apnea-hypopnea index < 5 events/h, oxygen saturation ≥ 92%, and respiratory effort-related arousal index ≥5/hour.<sup>12</sup> Finally, another study used a slightly different definition when AHI <5/hour, minimum SpO<sub>2</sub> ≥ 92%, the presence of airflow limitation during sleep for ≥5% of total sleep time, and daytime sleepiness and/or fatigue.<sup>13</sup> The fact that multiple definitions are used for UARS should not be an obstacle to identifying it.

UARS positive patients, along with OSA positive patients are then referred for Nextgen Data Collection (see figure 5). UARS negative

**Lamberg Airway and Sleep: Data Collection & Referrals V8**

Cardiologist    Dentist    Dietician    Otolaryngologist    Pulmonologist  
 Orthodontist/Oral Surgeon    Oral Myologist    Neurologist    Psychologist

**FIGURE 5**

# DATA COLLECTION AND REFERRALS

## “STRUCTURE, FUNCTION, BEHAVIOR, +”

<b>Clinical:</b>	Y	N			
Tonsils Brodsky Grade 3 - 4	<input type="checkbox"/>	<input type="checkbox"/>			
Cottle Maneuver +	<input type="checkbox"/>	<input type="checkbox"/>			
Enlarged Uvula	<input type="checkbox"/>	<input type="checkbox"/>			
Allergic Shiners	<input type="checkbox"/>	<input type="checkbox"/>			
Dennie-Morgan Lines	<input type="checkbox"/>	<input type="checkbox"/>			
PNIF < 100 l/m	<input type="checkbox"/>	<input type="checkbox"/>			
FEV1 < 80%	<input type="checkbox"/>	<input type="checkbox"/>			
Lingual Inclination Mand Molars	<input type="checkbox"/>	<input type="checkbox"/>			
<b>Ceph:</b>	Y	N			
SNA < 79° Deficient Maxilla	<input type="checkbox"/>	<input type="checkbox"/>			
SNB < 76° Deficient Mandible	<input type="checkbox"/>	<input type="checkbox"/>			
PH-MP > 27° Excess Vertical Growth	<input type="checkbox"/>	<input type="checkbox"/>			
<b>CBCT:</b>	Y	N			
MP-H > 15mm	<input type="checkbox"/>	<input type="checkbox"/>			
MinXA < 110mm	<input type="checkbox"/>	<input type="checkbox"/>			
Intermolar Distance < 38mm (between max 1st molars)	<input type="checkbox"/>	<input type="checkbox"/>			
Intermolar Distance < 24mm+age (between primary 2nd molars <6 years)	<input type="checkbox"/>	<input type="checkbox"/>			
PCrit High	<input type="checkbox"/>	<input type="checkbox"/>			
ArTH Low	<input type="checkbox"/>	<input type="checkbox"/>			
Mouth Breathing	<input type="checkbox"/>	<input type="checkbox"/>			
Forward Head Posture	<input type="checkbox"/>	<input type="checkbox"/>			
Lip Incompetence	<input type="checkbox"/>	<input type="checkbox"/>			
Snoring (Palatal Flutter)	<input type="checkbox"/>	<input type="checkbox"/>			
<b>STRUCTURE (Anatomic)</b>	Y	N			
TMJ: Load Test +, Muscle Test +	<input type="checkbox"/>	<input type="checkbox"/>			
Excess Wear, Recession, NCCLs	<input type="checkbox"/>	<input type="checkbox"/>			
Erosion	<input type="checkbox"/>	<input type="checkbox"/>			
More than 8 Missing Teeth	<input type="checkbox"/>	<input type="checkbox"/>			
Tongue Overflow Max Arch	<input type="checkbox"/>	<input type="checkbox"/>			
Scalloped Tongue	<input type="checkbox"/>	<input type="checkbox"/>			
Enlarged Sclera	<input type="checkbox"/>	<input type="checkbox"/>			
Posterior Crossbite	<input type="checkbox"/>	<input type="checkbox"/>			
ANB > 5° Skeletal Class 2	<input type="checkbox"/>	<input type="checkbox"/>			
ANB < 1° Skeletal Class 3	<input type="checkbox"/>	<input type="checkbox"/>			
PV-A Line < 97mm Retrognathic Maxilla	<input type="checkbox"/>	<input type="checkbox"/>			
Intercuspid Distance < 29mm	<input type="checkbox"/>	<input type="checkbox"/>			
PHI (H/W x 100) > 42%	<input type="checkbox"/>	<input type="checkbox"/>			
Dental Crowding	<input type="checkbox"/>	<input type="checkbox"/>			
Mucosal Thickening in Max Sinus	<input type="checkbox"/>	<input type="checkbox"/>			
Hypertrophied Turbinates	<input type="checkbox"/>	<input type="checkbox"/>			
<b>FUNCTION (Physiologic)</b>	Y	N			
Loop Gain High	<input type="checkbox"/>	<input type="checkbox"/>			
Dialator Muscle Response Low	<input type="checkbox"/>	<input type="checkbox"/>			
<b>BEHAVIOR A (Habits)</b>	Y	N			
Chest Breathing	<input type="checkbox"/>	<input type="checkbox"/>			
Low Tongue Resting Posture	<input type="checkbox"/>	<input type="checkbox"/>			
<b>BEHAVIOR B (Muscle Function)</b>	Y	N			
Swallow Accompanied by Tongue Thrust	<input type="checkbox"/>	<input type="checkbox"/>			
Overactive Perioral Musc. (incl. Mentalis) on Swallow or Lip Closure	<input type="checkbox"/>	<input type="checkbox"/>			

# DATA COLLECTION “STRUCTURE, FUNCTION, BEHAVIOR, +”

## 7 TARGETS REVEALED



1. NASAL RESISTANCE/OBSTRUCTION
2. SOFT TISSUE RESTRICTIONS, INFRINGEMENTS, BMI
3. SKELETAL AND DENTAL COMPENSATIONS
4. PHYSIOLOGIC (NON-ANATOMIC) COMPENSATIONS
5. BEHAVIORAL COMPENSATIONS (MUSCLES AND HABITS)
6. GENETIC CONTRIBUTIONS
7. COMISA / COMIUARTS

Lamberg Airway and Sleep: Data Collection & Referrals V8

Name: \_\_\_\_\_ Title: \_\_\_\_\_ Chief Complaint: \_\_\_\_\_

Category	Item	Y	N	Item	Y	N
VITAL SIGNS	Heart (Resting HR)	<input type="checkbox"/>	<input type="checkbox"/>	Neck	<input type="checkbox"/>	<input type="checkbox"/>
	Heart Rate High	<input type="checkbox"/>	<input type="checkbox"/>	Waist	<input type="checkbox"/>	<input type="checkbox"/>
	ECG (HR) High	<input type="checkbox"/>	<input type="checkbox"/>	Height	<input type="checkbox"/>	<input type="checkbox"/>
	ECG (HR) Low	<input type="checkbox"/>	<input type="checkbox"/>	Weight	<input type="checkbox"/>	<input type="checkbox"/>
	ECG (HR) Normal	<input type="checkbox"/>	<input type="checkbox"/>	BMI > 30	<input type="checkbox"/>	<input type="checkbox"/>
	ECG (HR) Abnormal	<input type="checkbox"/>	<input type="checkbox"/>	BMI > 35	<input type="checkbox"/>	<input type="checkbox"/>
	ECG (HR) Normal	<input type="checkbox"/>	<input type="checkbox"/>	BMI > 40	<input type="checkbox"/>	<input type="checkbox"/>
	ECG (HR) Abnormal	<input type="checkbox"/>	<input type="checkbox"/>	ECG (HR) Abnormal	<input type="checkbox"/>	<input type="checkbox"/>
	ECG (HR) Normal	<input type="checkbox"/>	<input type="checkbox"/>	ECG (HR) Abnormal	<input type="checkbox"/>	<input type="checkbox"/>
	ECG (HR) Abnormal	<input type="checkbox"/>	<input type="checkbox"/>	ECG (HR) Abnormal	<input type="checkbox"/>	<input type="checkbox"/>
STRUCTURE (Anatomic)	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>
	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>
	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>
	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>
	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>
	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>
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	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>
	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>	TMJ (Load Test)	<input type="checkbox"/>	<input type="checkbox"/>

Figure 6

patients, along with all other patients, must also receive screening for insomnia and be given the Insomnia Severity Index “ISI” due to the frequency of the conditions coexisting and the potential negative health consequences.

Comorbid insomnia and sleep apnea “COMISA” are the most common co-occurring sleep disorders, with a global prevalence between 18% and 42%, and a prevalence between 29% and 67% among patients presenting for treatment. COMISA is associated with increased medical (eg, cardiometabolic conditions) and psychiatric morbidity (eg, mood disorders, post-traumatic stress disorder), and worse daytime functioning relative to each condition alone. As a result, clinical management of COMISA is often very challenging.<sup>14</sup> Additionally a longer duration of insomnia is associated with a higher risk of incident diabetes.<sup>15</sup> A new term, COMIUARTS, is suggested for non OSA patients with UARS and comorbid insomnia. Nextgen Data Collection is then broken down into three categories: structure, function, and behavior. This separation of data collection helps the clinician focus more on diagnosing the cause of the problem(s) and

ultimately reveals 7 general treatment target areas (See figure 6). There are so many types of treatments available, such as mandibular advancement devices “MADs”, positional therapy, upper airway surgery, and maxillomandibular osteotomy.<sup>16,17,18</sup> The primacy of connecting the treatment options to the diagnosed cause(s) cannot be overstated. We need to focus less on the technologies available and more on specific ways to address the biologic compensations that are present.<sup>19</sup>

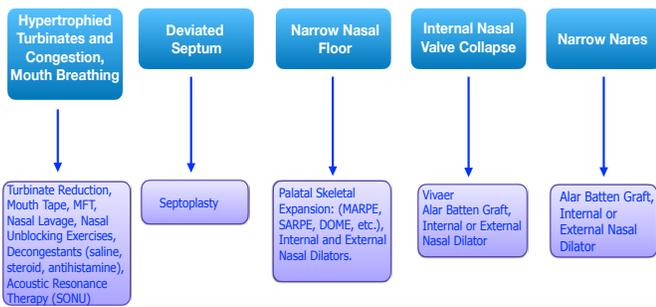
To help in this regard, each of the 7 treatment target areas are further broken down into subcategories (see figures 7,8,9,10,11,12,13,14) which have been shown to be responsive to specific treatments. Treatments and their specific targets are then graphically associated to help in treatment planning your patients.

Further research is needed to aid in diagnosis of specific compensations and associate them with the most effective treatments. In order to reach the entire population, and combat the high levels of undiagnosed disease, the data collection process must be simplified and cost effective. Finally Life

## 1- NASAL RESISTANCE/OBSTRUCTION

FIGURE 7

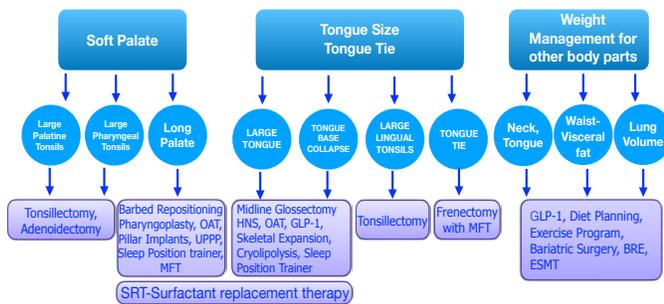
### DECOMPENSATION OPTIONS



## 2- SOFT TISSUE RESTRICTIONS, INFRINGEMENTS, BMI

FIGURE 8

### DECOMPENSATION OPTIONS



## 3- SKELETAL AND DENTAL COMPENSATIONS

### DECOMPENSATION OPTIONS

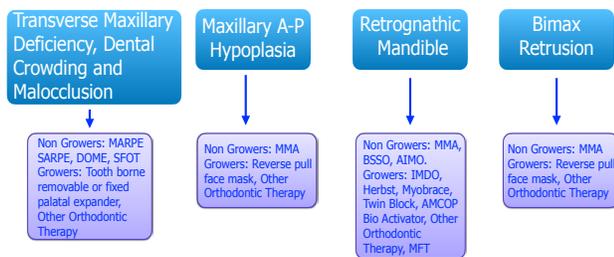
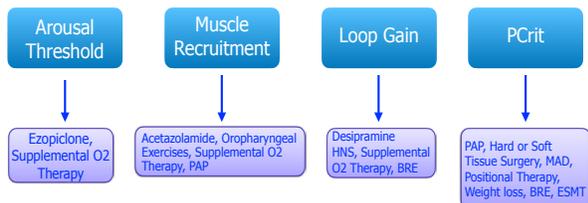


FIGURE 9

## 4- FUNCTION: PHYSIOLOGIC DYSFUNCTION

FIGURE 10

### DECOMPENSATION OPTIONS



Style modifications are listed as they are non invasive and benefit everyone (see figure 15).

Integrating SDB screening into dental practice represents a pivotal step toward bridging oral health and overall healthcare. Dentists and orthodontists are uniquely positioned to identify anatomical and behavioral risk factors for SDB, enabling early intervention that can prevent long-term systemic health complications.<sup>20</sup> As dental professionals see their patients twice per year with a focus on the craniofacial respiratory structures, the field of dentistry is organically becoming the primary care platform for airway. From orthodontists and maxillofacial surgeons to otolaryngologists, from sleep medicine physicians to myofunctional therapists, the transdisciplinary approach is therefore the foundational element of the treatment algorithm used to treat these patients.<sup>21</sup>

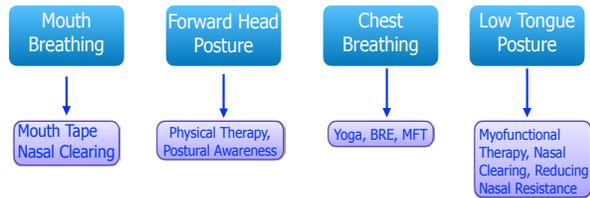
By collecting data (structural, functional, behavioral) that relate to risk factors which contribute to the collapse of the airway, we are able to develop a rational approach to treatment choices. As our understanding of the complexities of airway and sleep grows, it becomes increasingly important to work with specialists from many disciplines to more predictably target and treat the cause of the problem and move forward from treating the severity of the disease.

This personalized sleep medicine strategy represents a transformative shift in healthcare, emphasizing individualized approaches to optimizing sleep health, considering the bidirectional relationship between sleep and health.<sup>22</sup>

## 5A- BEHAVIOR A: HABITS

FIGURE 11

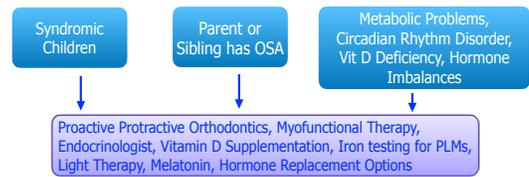
### DECOMPENSATION OPTIONS



## 6- GENETIC CONTRIBUTIONS

FIGURE 13

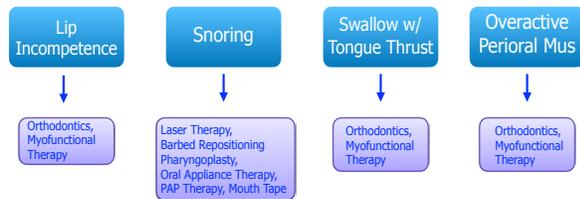
### DECOMPENSATION OPTIONS



## 5B- BEHAVIOR B: MUSCLE FUNCTION

FIGURE 12

### DECOMPENSATION OPTIONS

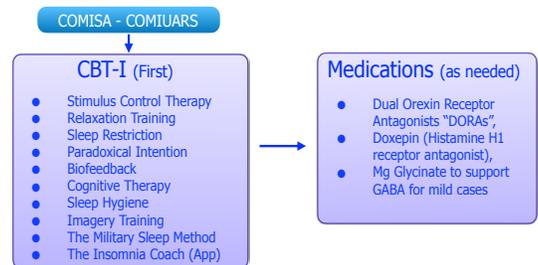


## 7- COMISA - COMIUARS

When insomnia occurs at least 3 nights per week and present for 3 months or ISI score is 15 or above and sleep disorder is present.

FIGURE 14

### DECOMPENSATION OPTIONS



## And finally... ALWAYS LIFESTYLE MODIFICATIONS

FIGURE 15

- WEIGHT LOSS
- PHYSICAL EXERCISE
- SMOKING CESSATION
- AVOIDANCE OF ALCOHOL
- AVOIDANCE OF SEDATIVES
- REDUCED SCREEN TIME AT BEDTIME

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