

Oral Appliance Therapy Overview: Combination Therapy with PAP and the Use of Nightly Monitoring to Optimize Care

Rob Veis D.D.S

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Conflict of Interest

CEO, SML – Space Maintainers Laboratories



SPACE MAINTAINERS
LABORATORIES

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Disclaimers

The opinions expressed in this presentation are those of the speaker and not necessarily those of the organization or group hosting this event.

The opinions expressed in this lecture should not be construed as advice to care of specific patients.

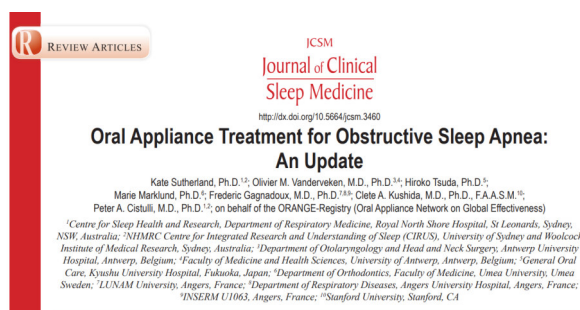
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Upon completion of this lecture, you will be able to:

- Recognize the different categories of Sleep Appliances
- Understand the basic design components of a variety of sleep appliances.
- Be better able to choose a sleep appliance to meet the individual requirements of each patient.
- Understand that successful Appliance Therapy often needs an Integrated Approach.

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Appliance Therapy works about 65% of the time?













5

To kick up your success rate you have to
select the right appliance for the **Individual.**

- Complete understanding of the **design** and **function** of the appliances.
- Thorough **patient evaluation.**

6

Out of 150 + different appliances, most beginners use **1 or 2** appliances regularly.

PRODUCT	RECOMMENDATIONS	CONTRA INDICATIONS	CONSTRUCTION BITE	ADJUSTMENT	MATERIAL OPTIONS	CPT CODES	MEDICARE APPROVED	COST
 Lambert SleepWell	• Excellent entry level appliance.	• Patient has less than 8 to 10 stable teeth per arch. • Arches are extremely crowded or misaligned. • Class II occlusion.	• Edge to edge 4mm vertical opening needed.	• Appliance delivered with 12 interchangeable inserts that allow up to 8mm of mandibular advancement.	• Pressure-molded polycarbonate or hard acrylic with clasps.	• E0486	NO	\$274.95
 Adjustable Dorsal	• Extra tongue room in front.	• Patient has less than 8 to 10 stable teeth per arch. • Arches are extremely crowded or misaligned.	• Taken with mandible 70% - 75% advanced and a 4mm interarcual opening.	• Bilateral expansion screws allow up to 8mm of mandibular advancement. Each turn is 25mm of advancement.	• Pressure-molded dual laminates or hard acrylic with clasps.	• E0486	NO	\$398.00
 Full Breath	• For patients who cannot tolerate mandibular advancement. • Provides positive control of tongue position. Requires instruction to learn adjustment protocol.	• Patient has less than 8 to 10 stable teeth per arch. • Patient has severe gag reflex.	• Centric occlusion 2-5 mm vertical opening.	• Addition of acrylic to horizontal bar provides control of tongue position. Instructions included to follow proper protocol for appliance delivery and adjustment.	• Thermal acrylic or hard acrylic with clasps.	• D17 (2300) (C24 700 15) (H040000) (E0486)	NO	\$416.00 (hard) \$376.00 (Thermoplastic)
 Naval CC	• Customized. • Ideal for patients with grinding teeth. • Good for TMJ/OSA.	• Short dental crown. • Excessive arches.	• Taken with mandible 70% - 75% advanced and a 4mm interarcual opening.	• 8mm protrusive range. • Flexible connecting tabs are easy to change.	• Medical-grade nylon.	• E0666	NO	\$550.00
 TAP TL	• Allows mandible to move laterally. • Easily adjusted by patient as instructed.	• Patient has less than 8 to 10 stable teeth per arch. • Arches are extremely crowded or misaligned. • Class II occlusion.	• Taken with mandible 70% - 75% advanced and a 4mm interarcual opening.	• Mandible is advanced by turning anterior thumb screw. • Thermoplastic can be modified once ideal mandibular position is achieved.	• Pressure-molded polycarbonate or hard acrylic with clasps.	• E0486	YES	\$328.00
 TAPII	• Allows mandible to move laterally. • Easily adjusted by patient as instructed.	• Patient has less than 8 to 10 stable teeth per arch. • Arches are extremely crowded or misaligned. • Class II occlusion.	• Taken with mandible 70% - 75% advanced and a 4mm interarcual opening.	• Hex key is provided with appliance to allow for advancing middle screw mechanism.	• Pressure-molded polycarbonate or hard acrylic with clasps.	• E0486	YES	\$378.00
 TAP Elite	• Allows mandible to move laterally. • Easily adjusted by patient as instructed.	• Patient has less than 8 to 10 stable teeth per arch. • Arches are extremely crowded or misaligned. • Class II occlusion.	• Taken with mandible 70% - 75% advanced and a 4mm interarcual opening.	• Hex key is provided with the appliance to allow for adjusting. • Two interchangeable tabs are provided for the upper portion of this TAP design.	• Pressure-molded polycarbonate or hard acrylic with clasps.	• E0486	YES	\$410.95
 Adjustable Helix	• Easy to adjust. • Provides maximum room for tongue.	• Patient has less than 8 to 10 stable teeth per arch.	• Taken with mandible 70% - 75% advanced and a 4mm interarcual opening.	• Adjustments are made with a key to rotate the posterior lamellae on the appliance.	• Hard acrylic with clasps.	• E0486	YES	\$367.00
 ZQuiet Pro-Plus	• Extra tongue room in front.	• Patient has less than 8 to 10 stable teeth per arch. • Arches are extremely crowded or misaligned.	• Taken with mandible 70% - 75% advanced and a 4mm interarcual opening.	• Bilateral expansion screws allow up to 8mm of mandibular advancement. Each turn is 20 mm of advancement.	• Thermoplastic Teflon.	• E0486	NO	\$450.00
 Zypso V	• Lightweight, easy-to-adjust dual-action hinge mechanism for both mandibular advancement and tongue stabilization.	• Patient has less than 8 to 10 stable teeth per arch. • Patient has severe gag reflex or respiratory disorder. • Mandibular advancement or protrusion of TMJ. • Patient's underlying dental work (root) requires temporary crown.	• Edge-to-edge 4mm vertical opening needed.	• Appliance delivered with orthodontic elastic and posterior tongue band to ensure sufficient mandibular advancement, adjustment and tongue stabilization (if needed).	• Vacuum-formed polycarbonate with clasps.	• E0486	NO	\$299.00











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1-800-423-3270

PRICE SUBJECT TO CHANGE

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Out of 150 + different appliances, most experienced dentists will regularly use **7 to 8** of them.

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 Adjustable Dorsal	• Extra tongue room in front.	• Patient has less than 8 to 10 stable teeth per arch. • Arches are extremely crowded or misaligned.	• Taken with mandible 70% - 75% advanced and a 4mm interarcual opening.	• Bilateral expansion screws allow up to 8mm of mandibular advancement. Each turn is 25mm of advancement.	• Pressure-molded dual laminates or hard acrylic with clasps.	• E0486	NO	\$398.00
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PRICE SUBJECT TO CHANGE

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Functional Characteristics and Design Variations

- Method of Retention
- Type of Material- PMMA cold cure, printed control cured, Thermoplastic, Dual laminate, Milled Vinyl
- Adjustability
- Vertical Opening
- Freedom of Jaw Movement
- Lab vs. Office Construction

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Follow up article on Appliance Materials



[HOME](#) [NADL](#) [STANDARDS](#) [REGULATIONS](#) [RESOURCES](#) [VIDEOS](#) [FAQ](#) [BLOG](#) [CONTACT](#) 

Sleep Appliance Options

Let's Take a
Closer Look...



<https://dentallabs.org/sleep-appliance-options/>

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Types of Oral Appliances

- Mandibular Advancement Devices
- Tongue Controllers
- Test Appliance/Emergency Appliance
- CPAP Compatible/Combination Therapy
- Combination Therapy

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Mandibular Repositioners

- Repositioning the Mandible and Indirectly pull the tongue forward by virtue of its attachment to the geniotubercles.
- Increase the baseline genioglossus muscle activity.
- Stabilize the mandible and Hyoid bone to prevent jaw opening and retrolapse of the tongue.

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The Clark (UCLA) Modified Herbst



- Ball clasps
- Occlusal/buccal/lingual coverage
- Acrylic
- Vertical determined by the bite- non adjustable
- Excellent freedom of movement
- Lab made

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Class II Div2



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Repositioned to an End to End Bite



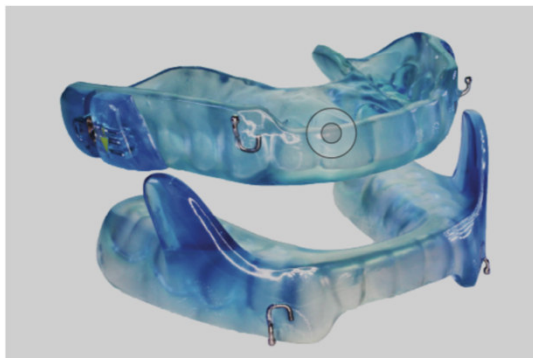
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Herbst Open Anterior Design



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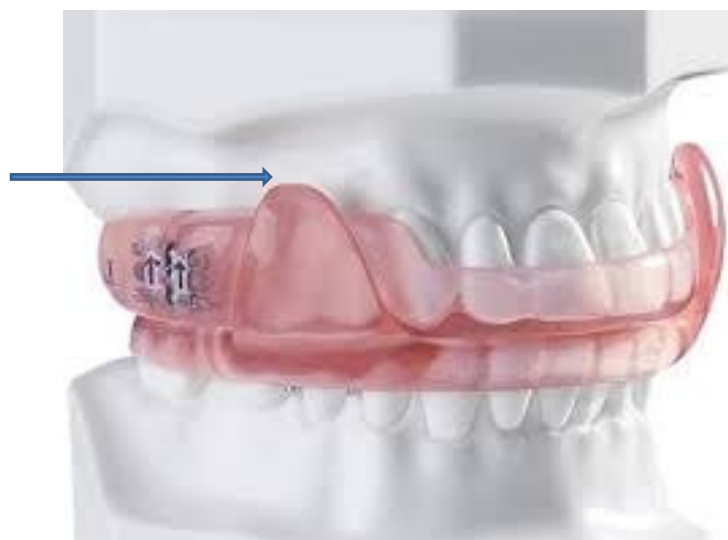
The Adjustable Dorsal



- Impressions must include the vestibule.
- Prefer the hard acrylic and clasps as dual laminate material is not adjustable.
- Both side need to be adjusted equally.
- Problem for lateral bruxer

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**Capture the vestibule
In your impression or scan**



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Exostosis



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A contra-indication for the Dorsal design



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Multiple companies / Multiple modifications



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Choice of Materials can make a difference

Retrofitting Crowns Under Sleep Appliances

Using Crown and Bridge Technology in the Dental Sleep World



The relationship patients have with their sleep appliances is well documented. Patients have come to rely on their particular appliance and when they need a crown made, they are hesitant to give up their appliance, let alone have a new one made. In some cases, dentists can adjust the existing appliance to fit the crown, however not all appliances are easily adjusted.

Using digital crown and bridge technology, Dental Prosthetic Services (DPS) has developed a protocol



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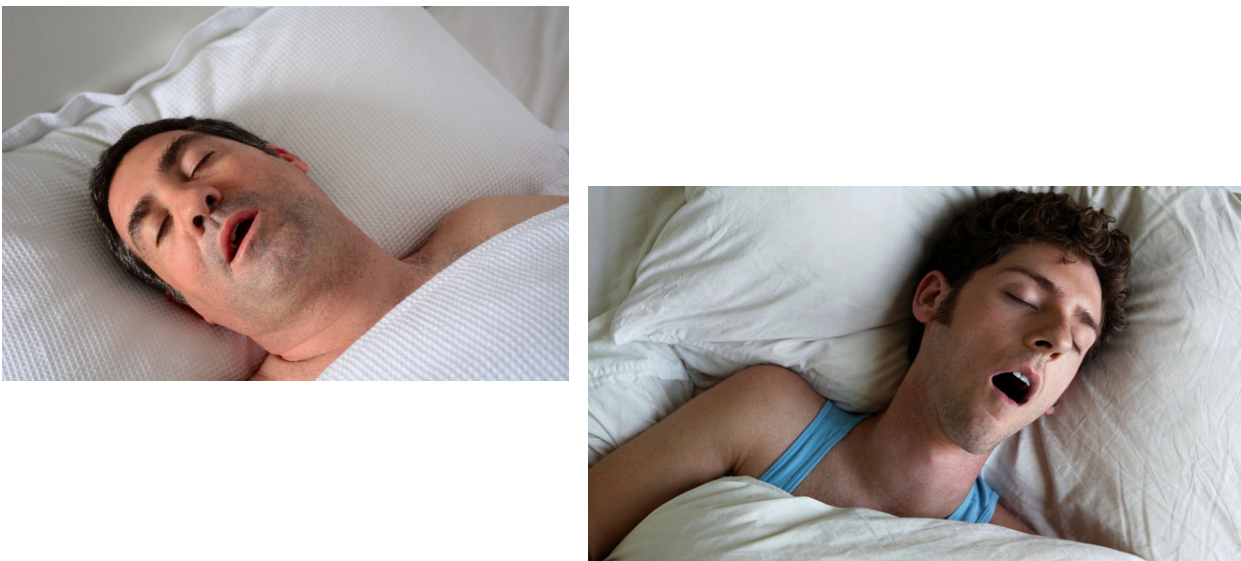
The TAP Elite



- More Durable
- Greater Range of adjustment
- More lateral Movement
- More Tongue Space

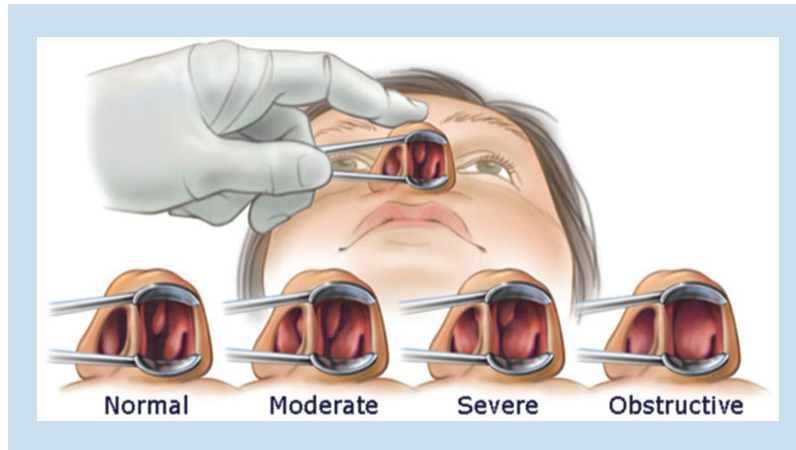
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Mouth breathing



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Nasal Obstruction



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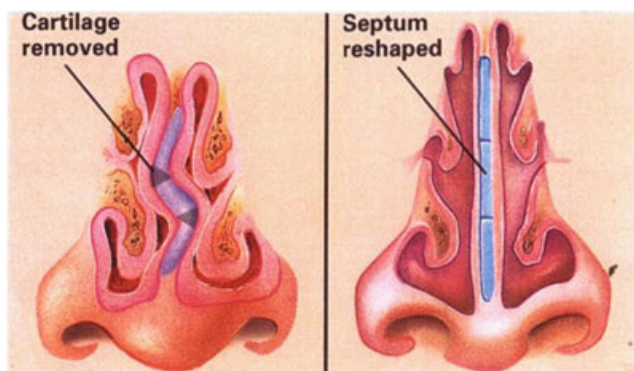
Nasal Surgeries

- **Endoscopic Sinus Surgery**
Chronic sinusitis may contribute to obstructive sleep apnea. remove blockages and drain mucous to improve airflow
- **Septoplasty**
straightens the cartilages and bone causing the blockage and deviation.
- **Turbinate Reduction**
Enlarged turbinates can contribute to sleep apnea.
A turbinate reduction opens up the blocked airways using cauterization, coblation, or radiofrequency ablation.
- **Nasal Valve Surgery**
Weak or collapsed sidewalls in the nose can obstruct airflow and cause sleep apnea. Sidewalls can be collapsed all of the time or only when you're inhaling.
There are several surgical procedures that can be performed to widen or support your nasal valves:
 - Spreader grafts widen the nasal valve
 - Alar batten grafts prevent collapse in the sidewall
 - Lateral nasal valve stabilization can support upper and lower lateral cartilages

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Nasal Surgery

- Always combined with other modalities
- Nasal surgery alone cannot cure OSAS



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Lamberg Sleep Well -Smartrusion



- Effective for bruxing patient
- Easy to modify design

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The Elastic Mandibular Appliance- EMA



- Retention- cclusal/buccal/lingual
- Vaccu-form material
- Adjustable using Straps can be difficult for the patient.
- Centric Occlusion bite that is 8-10 mm in the anterior following their arc of closure.
- Usually comfortable.
- Patients can open and have some lateral movement

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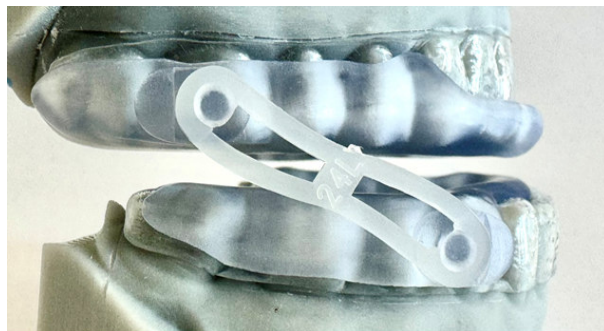
EMA Straps



Myerson's custom EMA has 4 strap strengths and 9 strap lengths. These 36 different strap combinations give you more control and flexibility when treating OSA, allowing your patients to get the sleep they need to lead full, healthy lives.

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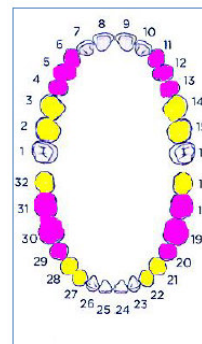
The Digitally Printed Clear Sleep



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Panthera

- Uses the clinical crown and undercuts for retention. Therefore it needs a sufficient number of posterior teeth for anchorage that have an acceptable clinical crown length
- CAD/CAM appliance made from **type 12 polyamide, a resistant biocompatible nylon.**
- Adjusts using connecting rods that change easily in 1mm increments up to 15 mm range
- Vertical uses Adjunctive pieces
- Freedom of jaw movement is adequate
- Smaller Lighter and Flexible
- Does not touch the incisors



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Problems in the making!



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Posterior Open Bite



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Posterior Open Bite



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Class II Div2



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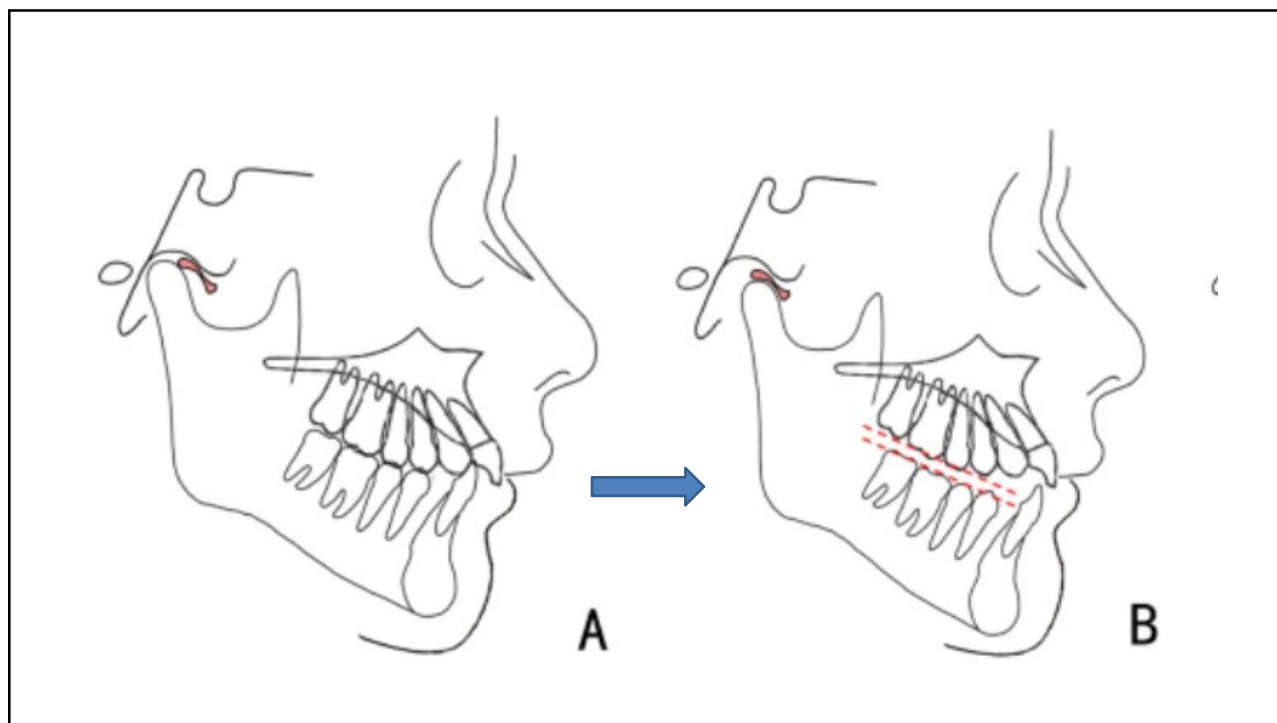
Changes in the TMJ after treatment with a functional appliance

After treatment :

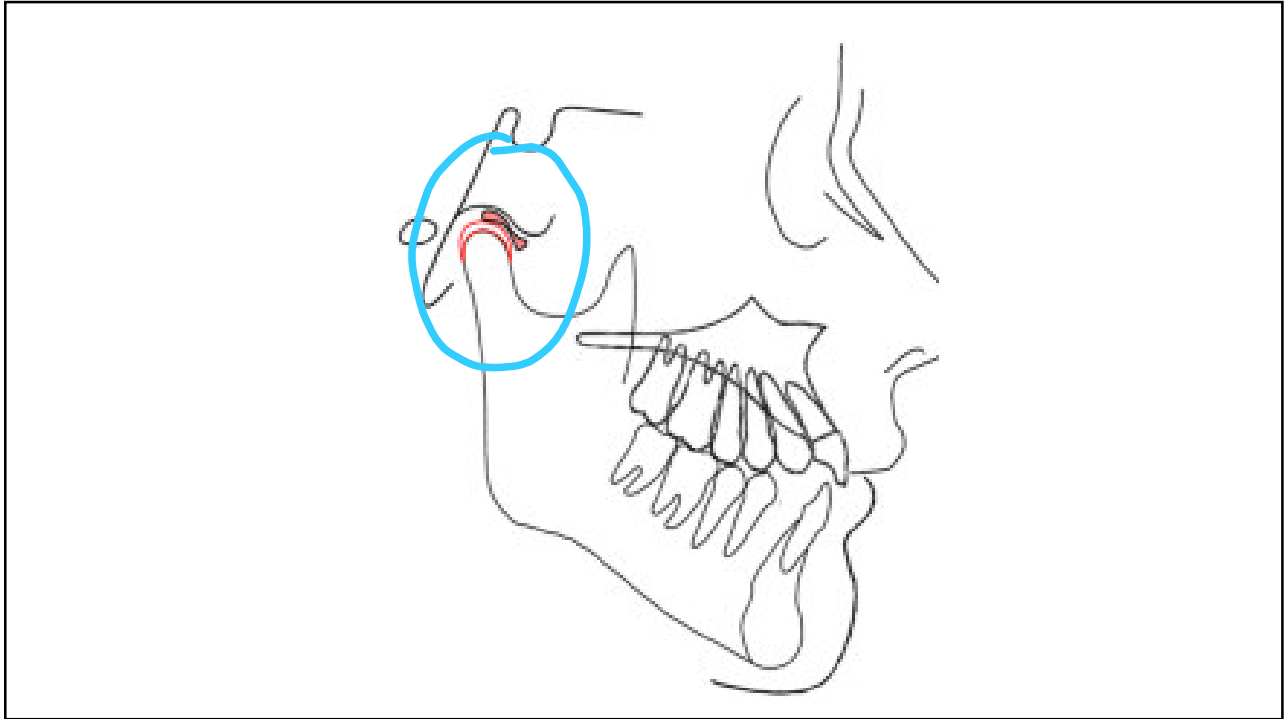
- the height, internal and external diameter, anterior and posterior diameter, volume, surface area of the condyle, and the depth of the articular fossa increased,
- also the length of the mandibular rami, length of the mandibular body, width of the mandibular rami, and mandibular length also increased.

Three-dimensional spatial analysis of temporomandibular joint in adolescent Class II division 1 malocclusion patients: comparison of Twin-Block and clear functional aligner
[Yueying Zhang, Jiajing Zheng, Qiuyue Wu, Tianlu Jiang, Hua Xiao, Yusen Du, Yizhe Qi, Zuolin Jin & Feifei Li](#)
[Head & Face Medicine](#) volume 20, Article number: 4 (2024)

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Jaw Position Changes

Fluid Accumulation and Joint Stiffness:

- The jaw joints (temporomandibular joints or TMJ) are designed to move back and forth, which helps to pump synovial fluid in and out of the joint. When the jaw is held in a forward position for several hours, the upper synovial compartment may not be compressed, leading to fluid accumulation and potential stiffness.

Muscle Adaptation and Shortening:

- The muscles that control jaw movement can adapt to the appliance's position, potentially leading to foreshortening of the muscles and making it harder for the jaw to return to its normal position in the morning.

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Morning Repositioner



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Morning Repositioner



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Good morning Positioner



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AM Repositioner



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Digital Morning Repositioner

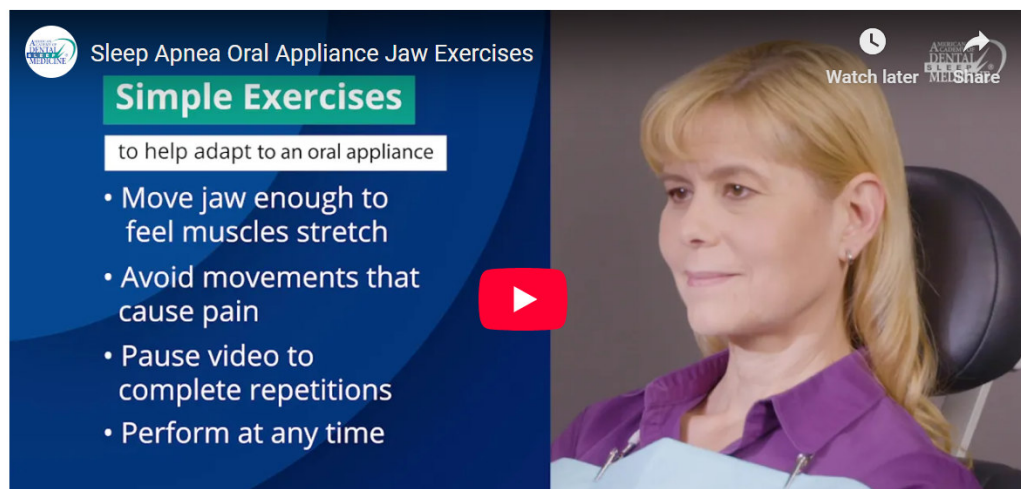


- Captures the patients **Centric Occlusion** Prior to treatment.

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Recommended jaw stretches by the American Academy of Dental Sleep Medicine (AADSM)

Here is a list of stretches recommended by the American Academy of Dental Sleep Medicine (AADSM). You can follow along for a clearer video demonstration [here](#):



Sleep Apnea Oral Appliance Jaw Exercises

Simple Exercises

to help adapt to an oral appliance

- Move jaw enough to feel muscles stretch
- Avoid movements that cause pain
- Pause video to complete repetitions
- Perform at any time

Watch later MELShare

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Tongue Retainers

- Hold the tongue including its base in a forward position.
- Increase baseline genioglossus muscle activity.
- Stabilize the tongue to prevent obstructive collapse during sleep.

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Tongue Retaining Device



Can be made for the fully or partially edentulous patient.

Not always well tolerated.
May need breathing tubes.

50

Tongue Retaining Device



51

Tongue Retaining Device



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Full Breath Solution



- Pros:**
- No repositioning needed.
 - Single jaw appliance.
 - Excellent for jaw joint patients.

- Cons:**
- High learning curve.
 - Multiple appointments to get good results.

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Combo Appliances

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Combo Appliances



Zyppah

- Great tongue control
- Combo appliance
- Light elastic forces
- Easily able to change the vertical

55

Combo Appliances

Zyppah Adjustable Herbst



Zyppah Dorsal



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Test appliances and Emergency Appliances

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SNOR-X Test device for TRD



- Pros:**
- Excellent for snoring.
 - Test appliance for the TRD.

- Cons:**
- Only Approved as a snoring appliance.

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Snore-Free



- Pros:**
- No impressions or models.
 - No lab bill.
 - Inexpensive.
 - Excellent test appliance.
 - Excellent interim appliance.
- Cons:**
- Cannot be titrated.
 - Not easily modified.

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Zyppah



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MyTap



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Vehicles for Nasal/Intraoral Positive Airway Pressure

- Intraoral
- Nasal
- Combo

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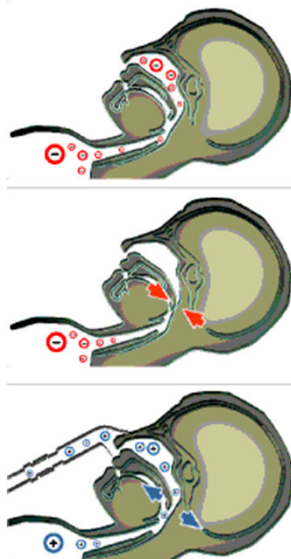


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CPAP is 99% effective



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CPAP Intolerance and Failure

There is a 60% or more failure rate within the first year!

The most common causes are:

- Pressures are too High
- Leaking mask
- Claustrophobic
- *Noisy* for self or bed partner
- Sinus issues
- Job or lifestyle restrictions
- Inconsistent Primary Care following up

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Mouth breathing



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CPAP Mask for Mouth Breathers



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Snore-Free with CPAP

Can a repositioning appliance help control the pressure and make CPAP more tolerable?



- Pros:**
- No impressions or models.
 - No lab bill.
 - Inexpensive.
 - Excellent test appliance.
 - Excellent interim appliance.

- Cons:**
- Cannot be titrated.
 - Not easily modified.

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The CPAP-Pro Attachment



The protruding "mouth extension bracket" is added to an upper splint to comfortably support a CPAP delivery system.

This eliminates the need for a facial mask and head straps.

70

The CPAP-Pro Assembly



- Pros:**
- Combination therapy.
 - Trial appliance.
 - Can also be attached to the UCLA Modified Herbst.
- Cons:**
- Takes practice to learn how to adjust it.
 - Must have an accurate bite that represents the position of the nose.
- Need:**
- Construction bite that captures the position of the nose.

Attached to an upper Splint – showing adjustment points and nose pillows

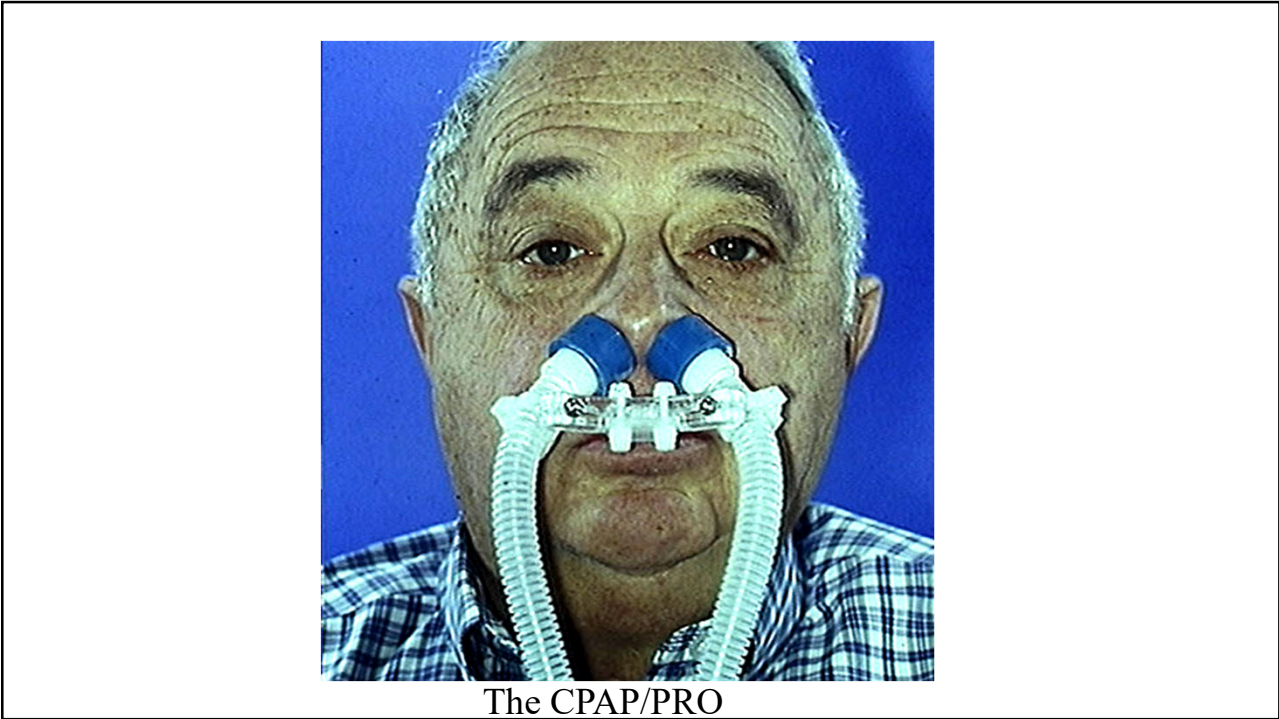
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The CPAP-Pro




Attached to a Clark (UCLA) Modified Herbst

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Two styles of CPAP interfaces



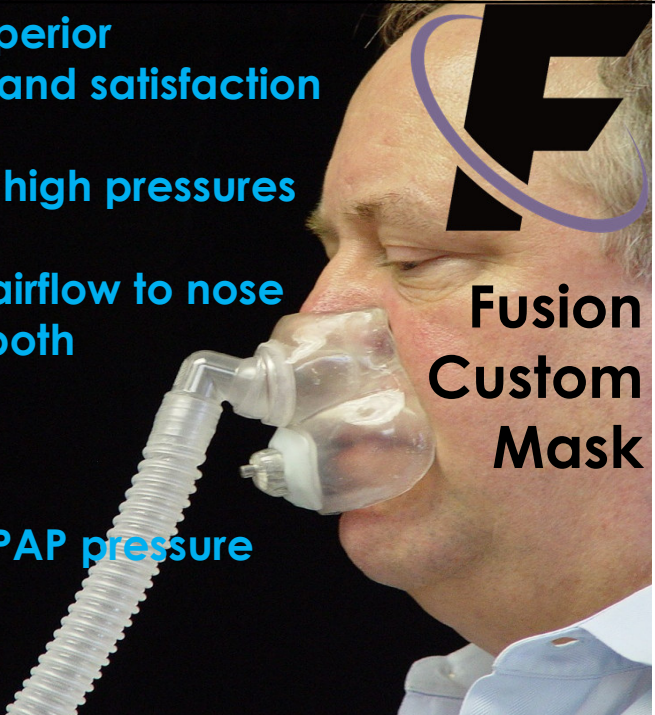
**TAP - PAP
CS**



**Fusion
Custom
Mask**

74

- Validated superior compliance and satisfaction
- Can tolerate high pressures
- Can modify airflow to nose or mouth or both
- Adjustable
- Can lower CPAP pressure



Fusion Custom Mask

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Today's Sleep Appliances are just a giant Band Aid



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Dentistry is experiencing two parallel and related growth trends: clear aligner treatment and the care for sleep-disordered breathing.

- aligners



- Sleep appliances

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Given the high prevalence of obstructive sleep apnea (OSA), it is not surprising that dental practitioners see many patients who show signs of OSA that also require or desire minor tooth crowding correction.

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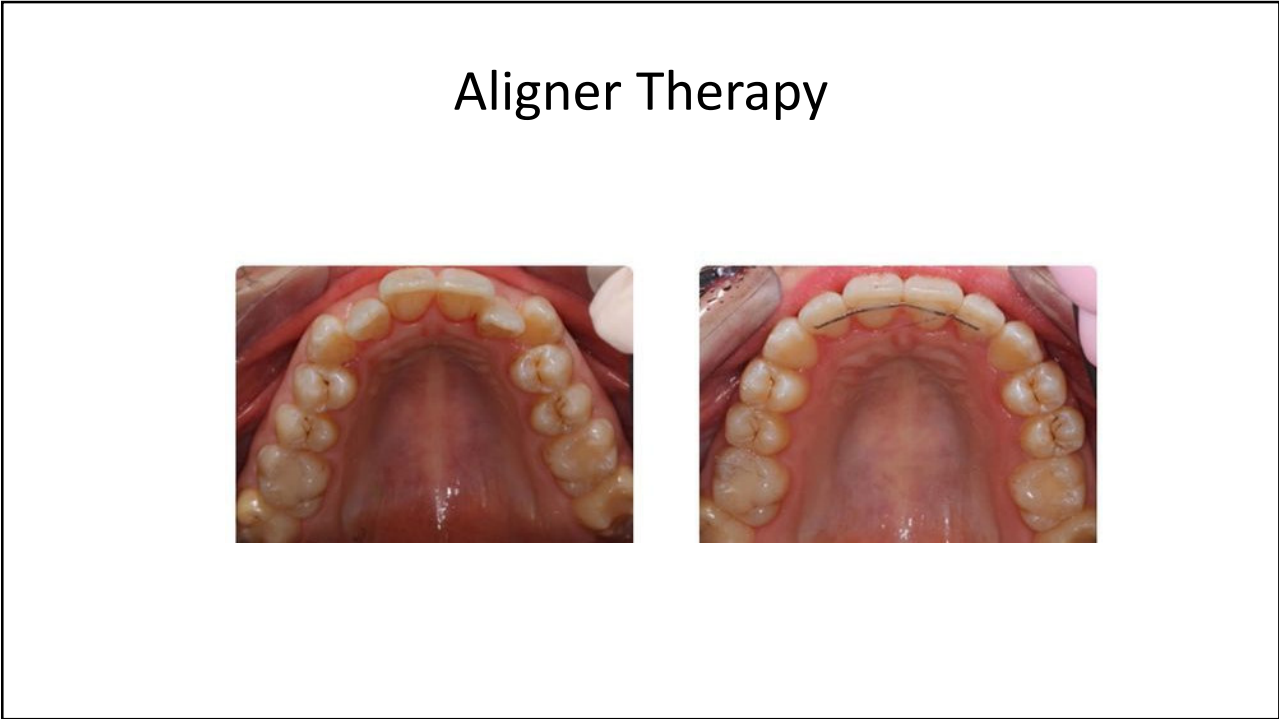
Given the high prevalence of orthodontic problems observed on a daily basis, and the relationship of malocclusion to airway issues, it is not surprising that these dental patients would have airway issues as well and would benefit from sleep therapy.

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Aligner Therapy



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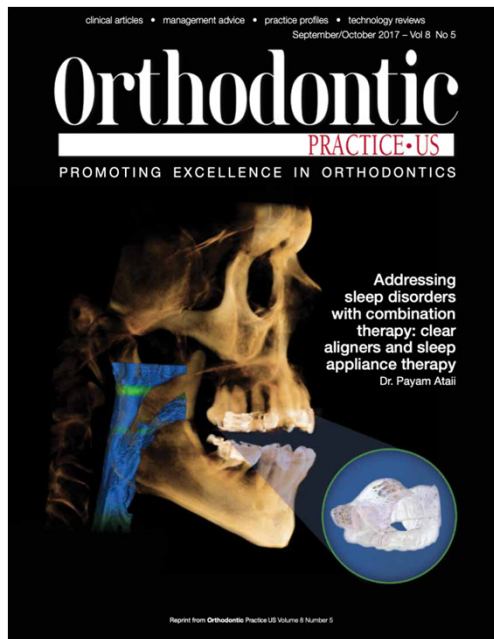


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Nov '17 issue of Orthodontic Practice US



CONTINUING EDUCATION

Addressing sleep disorders with combination therapy: clear aligners and sleep appliance therapy

Dr. Payam Atali discusses a sleep appliance specifically designed to be used in conjunction with clear aligners

Two parallel and related trends

Two parallel and related growth trends are occurring in the United States: the growth of clear aligner treatment and the rise of diagnosis for sleep-disordered breathing. Over the past year, over 600,000 patients in North America sought clear aligner treatment, and the market is growing by 20% per year.^{1,2} New indications for clear aligners are being introduced, and patients increasingly see the aesthetic benefits of clear aligners. At the same time, another trend in the U.S. is growing as strongly as clear aligners — the diagnosis of sleep-disordered breathing. Approximately 3.5 million sleep tests are ordered each year in the U.S., a number growing at nearly 13% annually.^{3,4}

The prevalence of sleep-disordered breathing is increasing. The National Center on Sleep Disorders Research (NCSDR), an organization within the National Institute of Health (NIH), states that about 70 million Americans suffer from sleep problems, with approximately 60% of these having a chronic disorder.⁵ Given the prevalence in the U.S. population, it is not surprising that orthodontists and general practitioners see many patients in their practice who show signs of sleep disorders that need to be treated. This problem cannot be ignored.

The NCSDR cites that “Sleep disorders, sleep deprivation, and sleepiness add an estimated \$15.8 billion to the national health care bill.”⁶ A variety of sleep appliances have been available for years to treat these patients, but the question has always been, “How do we treat patients with sleep disorders while addressing their oral complaint

Educational aims and objectives

The purpose of this article is to present the complexities and the solutions for combining clear aligner therapy with a new, FDA-approved custom dental sleep device.

Expected outcomes

- Orthodontic Practice US subscribers can answer the CE questions online at orthodonticpractice.us/articles to earn 2 hours of CE from reading this article. Credits generated by the questions will be available the next day.
- Realize some trends in the growth of clear aligner treatment and the rise of diagnosis of sleep-disordered breathing.
- Realize the integration between orthodontics and dental sleep medicine.
- Identify the clinical benefits of the sleep of the Aligner Sleep Appliance in conjunction with clear aligner therapy.
- List a few cases where a patient's orthodontic needs and medical needs were both accounted for during the treatment process.



to fix their smile?” Traditional sleep appliances cannot be used in conjunction with clear aligners unless both appliances need to be worn while the patient sleeps. Now, there is a solution to this problem — the Aligner Sleep Appliance (ASA).⁷ It is an FDA-cleared, custom device specifically designed to address this issue.

Integrating dental sleep medicine with a clear aligner practice

Dental sleep medicine and orthodontic practices go hand in hand. The correlation between malocclusions and sleep disorders has been established in the journals for some time now.⁸ Malocclusions can compromise the space within the oral cavity, limiting the capacity and functionality of the tongue. Especially when patients lie on their back during sleep, if malocclusions are limiting the tongue from properly resting at the roof

of the palate, there is a high likelihood that these patients will suffer from compromised airways and sleep disorders. Given these complexities, choosing the right service partners for both clear aligners and dental sleep is important for orthodontic practices. For clear aligners, working with a reputable clear aligner company can be helpful to make the process simple and gain access to the necessary tools. On the dental sleep side, proper diagnosis of the patient's sleep disorder as well as a comprehensive treatment plan that identifies the orthodontic considerations and type of appliances that may address the patient's airway is critical.

Sleepap7 is an example of a dental sleep services company that provides this type of expertise with integration of board-certified sleep physicians, orthodontists, and general sleep practitioners. When treating dental sleep patients, it is important to work with board-certified sleep physicians who may diagnose these conditions through high-quality home sleep tests or in-lab sleep tests. Most diagnostic companies or sleep laboratories are

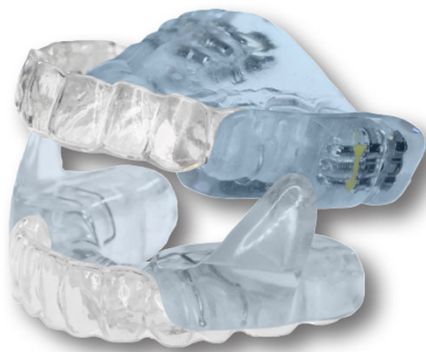
Dr. Payam Atali, DMD, is an award-winning graduate of Tufts Dental School who has treated more than a thousand patients with clear aligners and sleep apnea devices as more and combination therapies at his private practice in Laguna Hills, California. Dr. Atali has been an orthodontic faculty member for more than 10 years and was awarded the “North America Educator of the Year” award in 2014. As an author, Dr. Atali has been published in national and international dental professional publications, as well as numerous case and treatment. Over the years, Dr. Atali has presented lectures to thousands of dentists sharing the results of his research and his innovative practice growth techniques. Dr. Atali has developed and continues to develop courses for dental and sleep dentistry to deliver to patients. He serves on multiple company boards and is a recognized sleep apnea leader.

Disclosure: Dr. Atali is the co-inventor of the Aligner Sleep Appliance (ASA).⁷

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Aligner Sleep Appliance® (ASA)



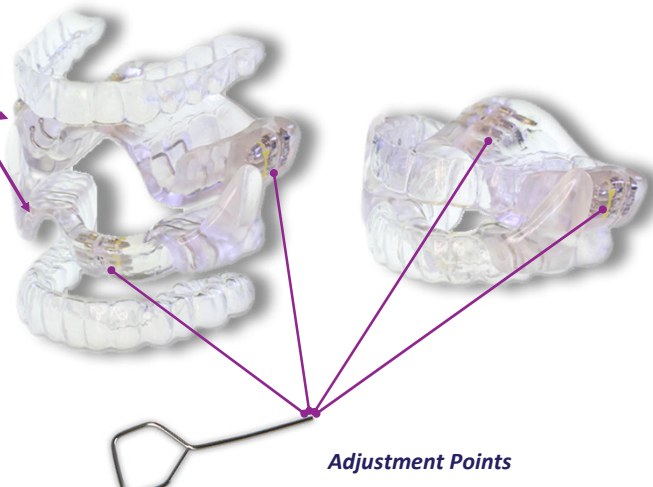
- Patented, FDA 510(k)-cleared device to treat patients with sleep disorders
- Comfortably fits over clear aligners at any stage of treatment
- Supports jaw forward, maintaining airway patent while addressing orthodontic corrections using clear aligner therapy

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Aligner Sleep Appliance® (ASA)

Amine and ethyl methacrylate-free over clear aligner trays

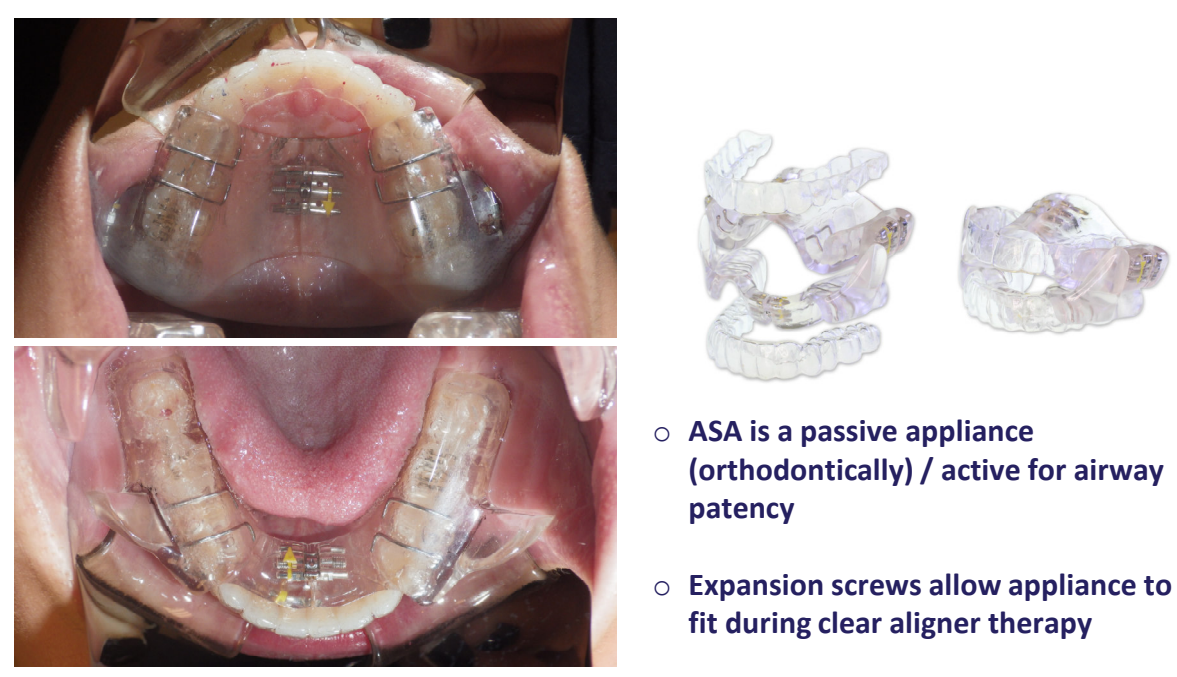
- Easy adjustable screws for bilateral retrofitting
- Up to 8 mm of mandibular advancement
- Fabricated via proprietary process that calibrates patient's final aligner



Adjustment Points

The image shows two views of the ASA: a side view and a top-down view. A metal tool with a looped handle is positioned at the bottom, with lines pointing to specific locations on the appliance labeled as 'Adjustment Points'. These points are located on the sides of the appliance, where screws are used for bilateral retrofitting.

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The image block contains two clinical photographs on the left showing the ASA fitted in a patient's mouth, and two product photographs on the right showing the appliance from different angles. The clinical photos show the appliance covering the upper and lower teeth, with expansion screws visible. The product photos show the appliance from a side view and a top-down view, highlighting the adjustment points.

- ASA is a passive appliance (orthodontically) / active for airway patency
- Expansion screws allow appliance to fit during clear aligner therapy

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Aligner Sleep Appliance® (ASA)



- Used for reducing nighttime snoring and mild-to-moderate Obstructive Sleep Apnea in adults.
- Dentist prescribed in conjunction with clear aligner therapy

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CONTRA-INDICATIONS ALIGNER SLEEP APPLIANCE®

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CONTRA-INDICATIONS

This appliance is contraindicated if the patient:

- Has Central Sleep Apnea (CSA)
- Has severe respiratory disorders
- Has loose teeth or advanced periodontal disease
- Is under 18 years of age
- Is edentulous or insufficient number of teeth to retain the appliance
- Has inadequate mandibular range of motion
- Has myofacial pain dysfunction - without treatment
- Has arthropathy of the TMJ - without treatment
- Is undergoing any type of orthodontic treatment with braces
- Is undergoing dental work that requires temporary / removable crowns

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WARNINGS

Improper use of the appliance may cause:

- Tooth movement or changes in the dental occlusion
- Gingival irritation or dental soreness
- Pain or soreness of the TMJ or facial muscles
- Potential loosening and/or dislodging of dental fillings or crowns.

NOTE: A small percentage of patients actually increase their number of apneic and hypopneic events when using an oral appliance.

Should your patients experience any of these adverse events, instruct them to discontinue use of the appliance and call your office.

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POSSIBLE SIDE EFFECTS

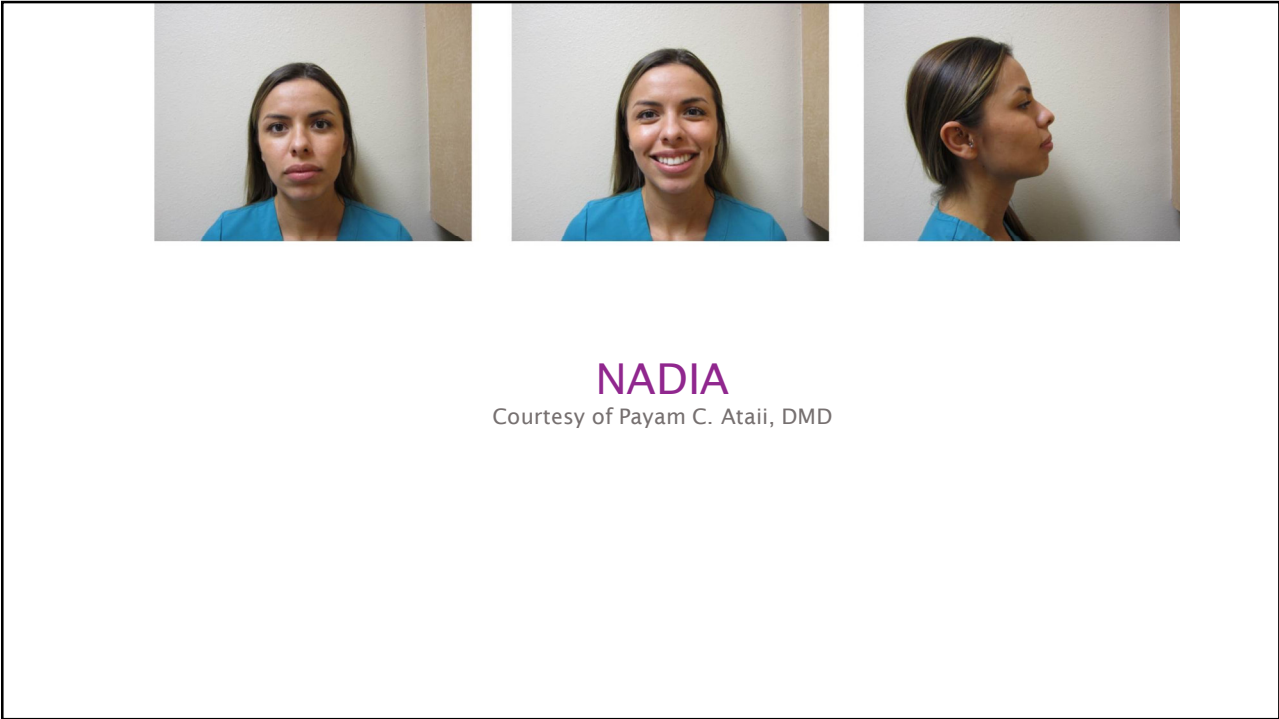
These side effects are not uncommon. If the patient experiences any of the following side effects, they should contact your office immediately.

- Slight tooth or gingival discomfort due to pressure of the appliance thru clear aligners
- Excess salivation – will improve as the patient becomes accustomed to wearing the appliance.
- Slight jaw soreness or tightness – initially and with adjustments / expansion
- Temporary bite change - will subside approximately 30 minutes after appliance is taken out of the mouth in the morning and the **Bite / Morning Positioner** is used
- Patient unconsciously taking the appliance out of their mouth at night
- Unilateral pressure on the teeth during sleep
- Pain in the jaw joint

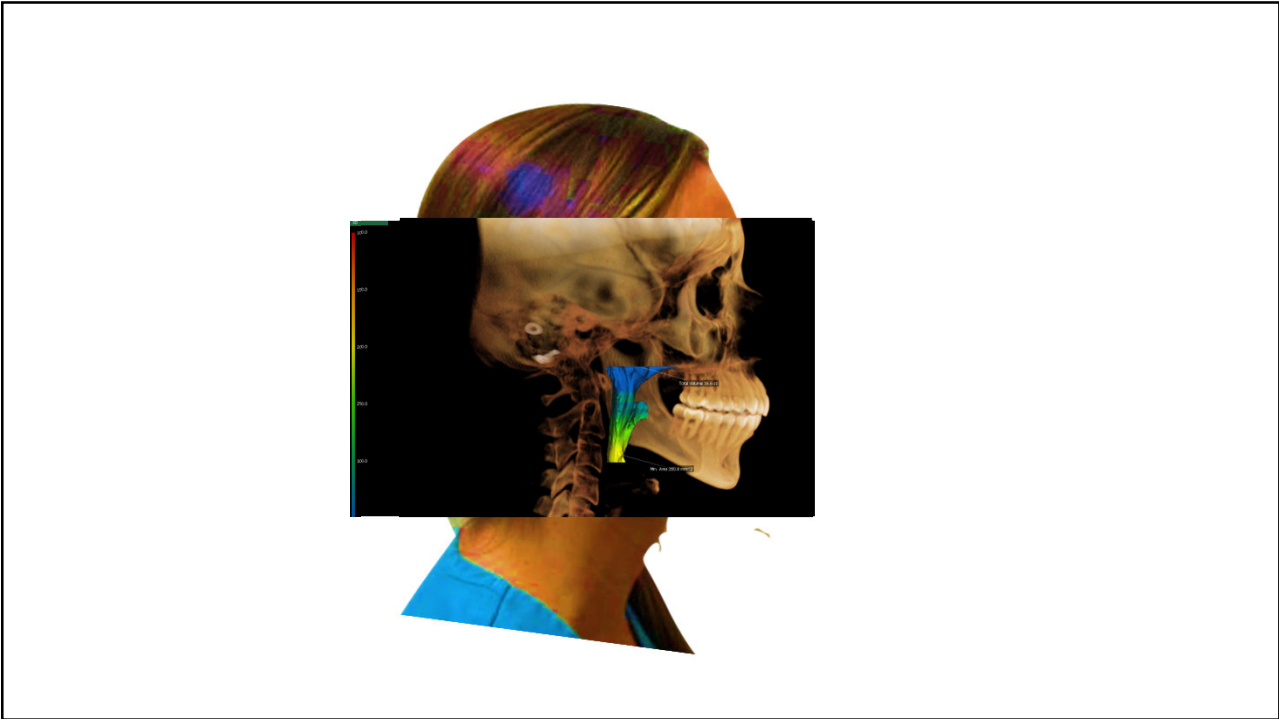
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CASE STUDIES

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How the Aligner Sleep Appliance works:



96

Treatment:

Aligner Sleep Appliance® and Clear Aligners



97

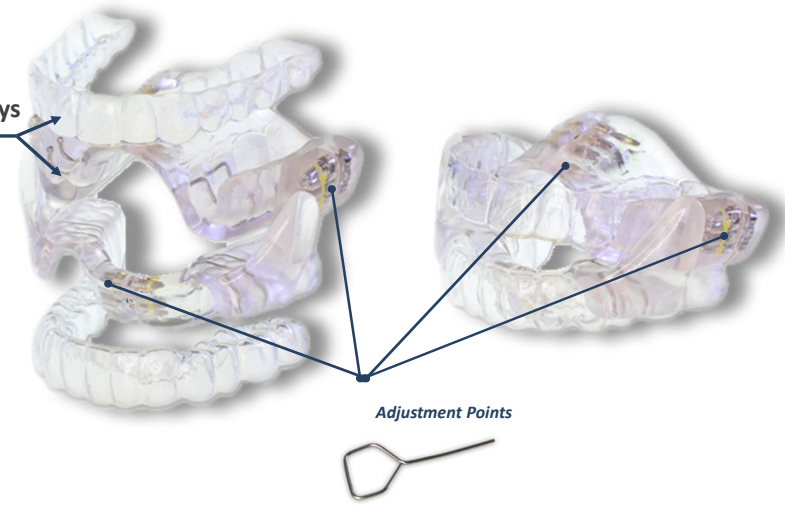


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Aligner Sleep Appliance® (ASA)

Hard Acrylic with clasps over Invisalign trays

- Easy adjustable screws for bilateral retrofitting
- Comfortably fits over clear aligner at any stage of treatment
- Up to 8 mm of mandibular advancement
- Patented and FDA-cleared Class II Medical Device



The diagram illustrates the ASA device, which consists of two clear acrylic trays. The upper tray is shown with a hard acrylic component that has clasps over Invisalign trays. The lower tray is shown with adjustment points. A small metal tool is shown below the adjustment points, used for adjusting the device. The text 'Adjustment Points' is written below the tool.

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Printable Clear Sleep/Combo Therapy

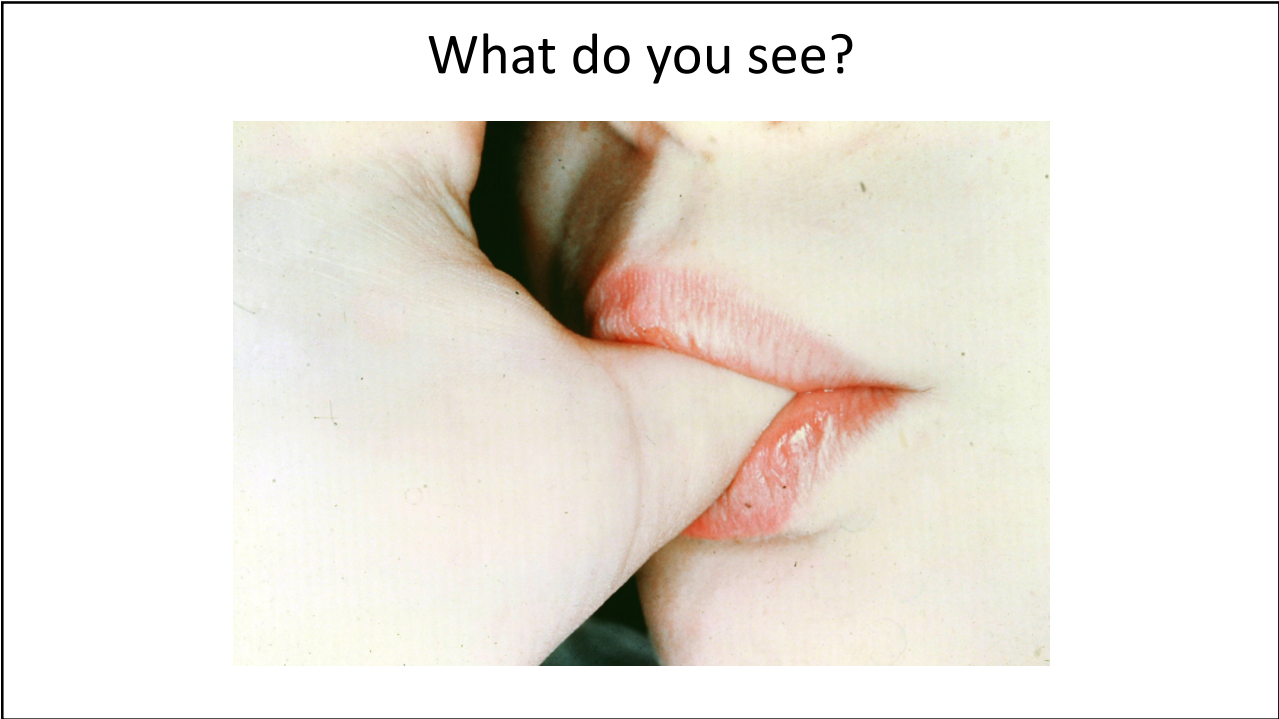


The first image shows six individual clear trays arranged in a 3x2 grid. The second image shows a close-up of the device on a dental model, highlighting the upper and lower trays. The third image shows a close-up of the device on a dental model, highlighting the adjustment points and the metal tool used for adjustment.

100

EARLY INTERVENTION AND PREVENTION

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102

What do you see?



Habits change the size, shape and position of the maxilla and the mandible

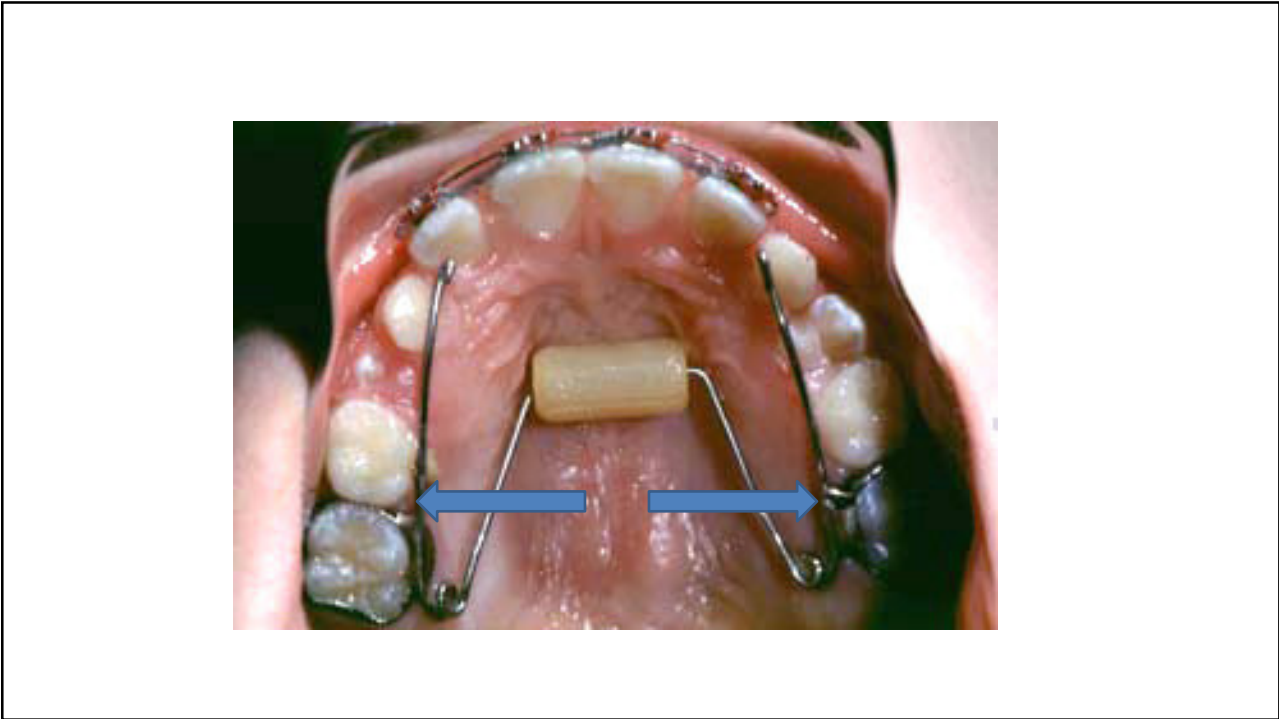
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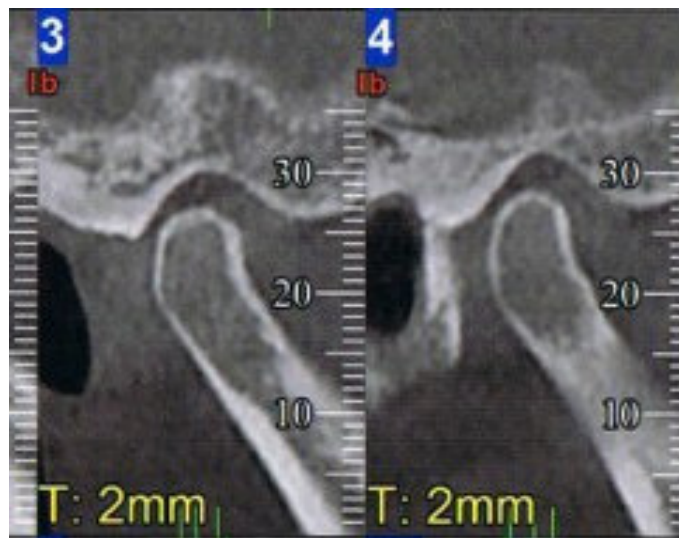
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What do you see?



107

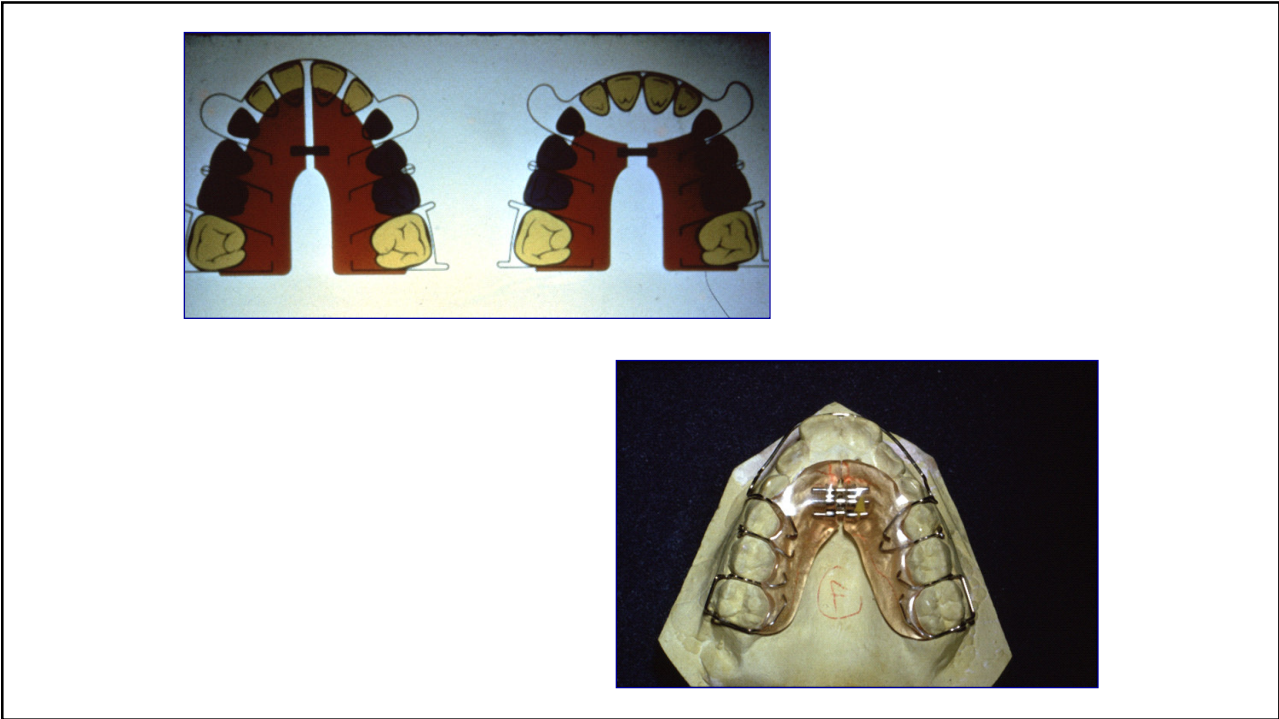
Joint films



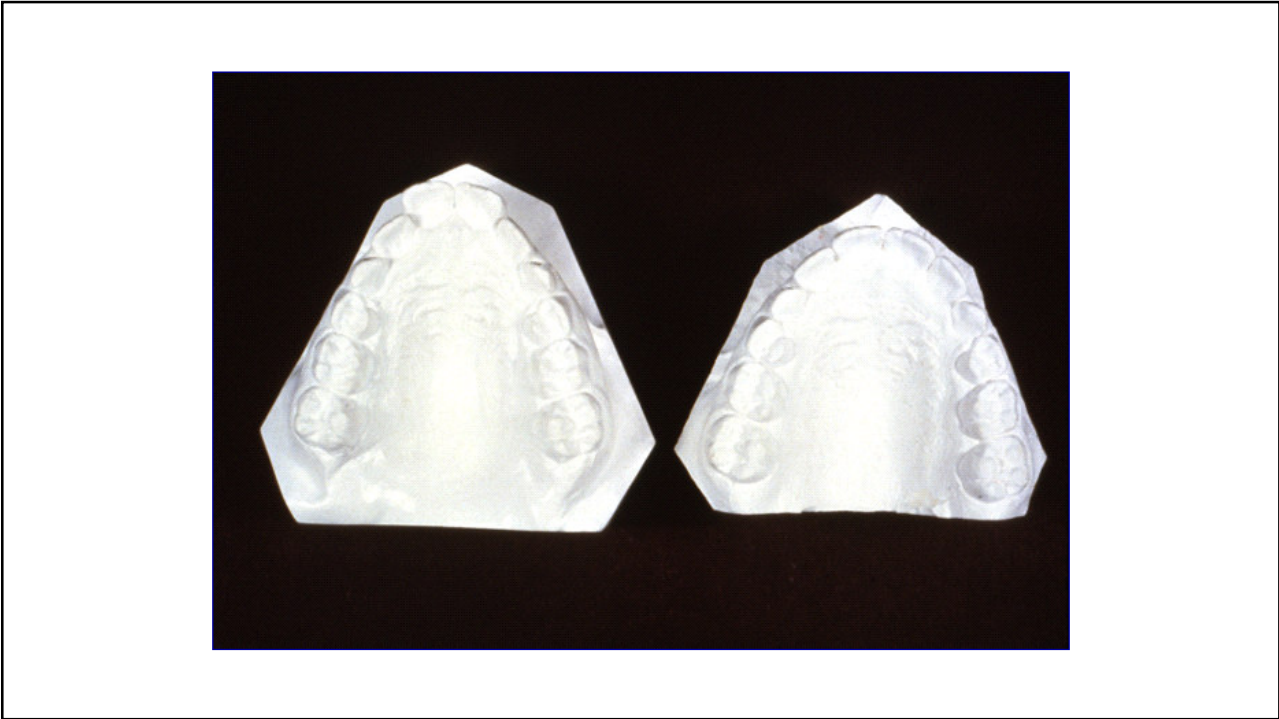
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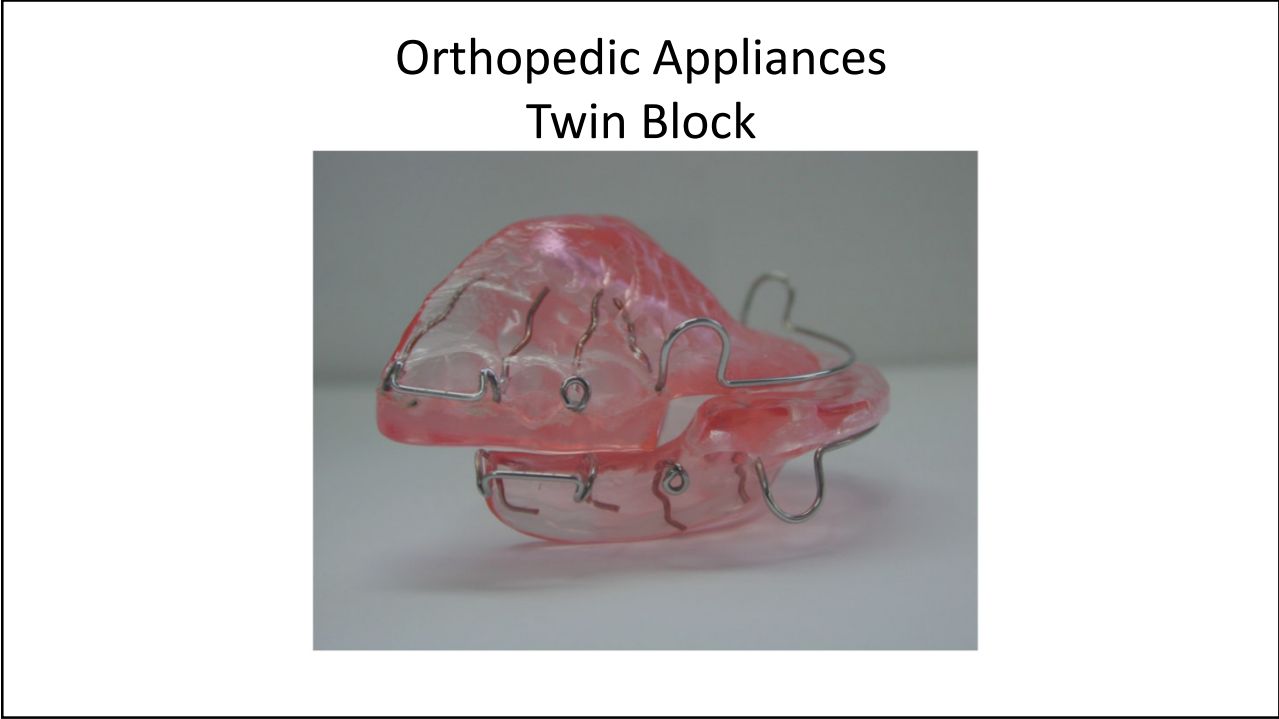
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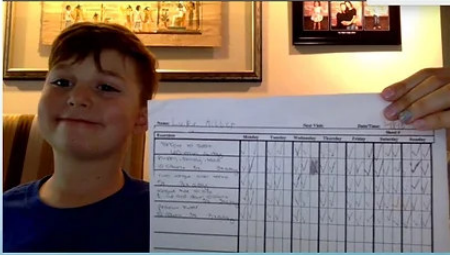
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MYOFUNCTIONAL THERAPY TO TREAT OSA: REVIEW AND META-ANALYSIS

Myofunctional Therapy to Treat Obstructive Sleep Apnea: A Systematic Review and Meta-analysis

Macario Camacho, MD¹; Victor Certal, MD²; Jose Abdullatif, MD³; Soroush Zaghi, MD⁴; Chad M. Ruoff, MD, RPSGT⁵; Robson Capasso, MD⁶; Clete A. Kushida, MD, PhD¹

1. Myofunctional therapy provides a reduction in AHI of approximately 50% in adults and 62% in children.
2. Improvements to daytime sleepiness and snoring.
3. Shown effective in children and adults of all ages studied thus far.
Youngest patient: 3 years old
Oldest patient: 79+ years old.
4. Important role in preventing relapse.



 **Stanford** | The Stanford Center for Sleep Sciences and Medicine

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Myofunctional Therapy

Myofunctional therapy is a program used to correct the improper function of the tongue and facial muscles. It involves strengthening of the tongue and orofacial muscles by teaching individuals how to engage the muscles to the appropriate position.

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Myofunctional Therapy

Individuals with predominant mouth breathing (or insufficient habitual nasal breathing) often develop maladaptive habits and patterns of orofacial function that may impact various conditions including:

- Facial skeletal growth (maxillofacial development)
- Sleep-disordered breathing (including snoring and sleep apnea)
- Nasal obstruction
- Oral hygiene and dental problems
- Teeth grinding (bruxism)
- Temporomandibular joint dysfunction
- Neck and shoulder tension
- Speech problems
- Facial esthetics
- And more....

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Myofunctional Therapy

Proper diagnosis allows for targeted and effective physical therapy exercises for oral posture retraining to promote better health with goals to improve breathing, reduce pain, and enhance quality of life. Please refer to Academy of Orofacial Myofunctional Therapy for a more detailed explanation on the impact of maladaptive orofacial posturing on maxillofacial growth and development: <https://aomtinfo.org/myofunctional-therapy>.

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Treatment choices

Scholarly articles for **Team approach to treating sleep apnea**

... advancement surgery for obstructive **sleep apnea** ... - PRINSELL - Cited by 145

Surgical therapy for **severe** refractory **sleep apnea** in ... - Burstein - Cited by 72

Snoring and obstructive **sleep apnea** from a dental ... - Veis - Cited by 25

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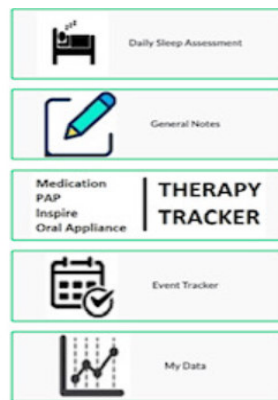
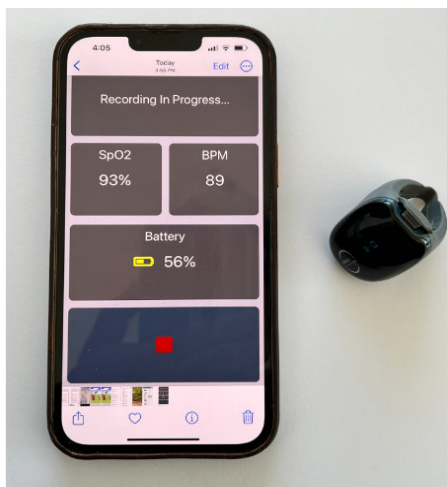
Multidisciplinary approach as a tool for personalised treatment ...

by D Carioli - 2017

We recommend. **Multidisciplinary** evaluation can find effective alternative **treatment** to **CPAP** in OSA patients. SAHS and stroke. High flow nasal cannula for children with **severe** obstructive **sleep apnea** not compliant with continuous positive airway pressure.

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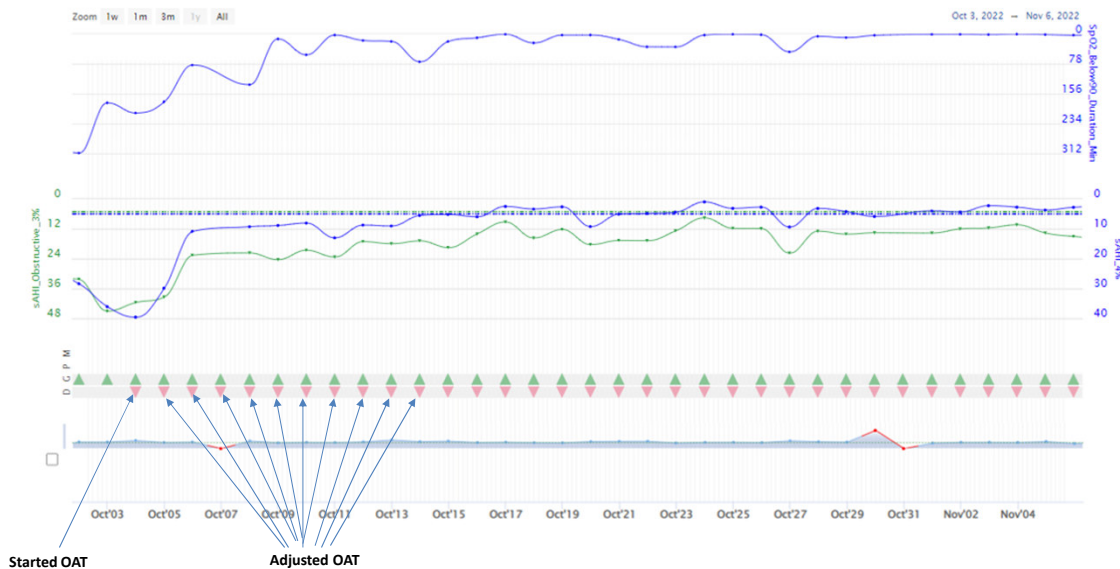
Nightly Monitoring



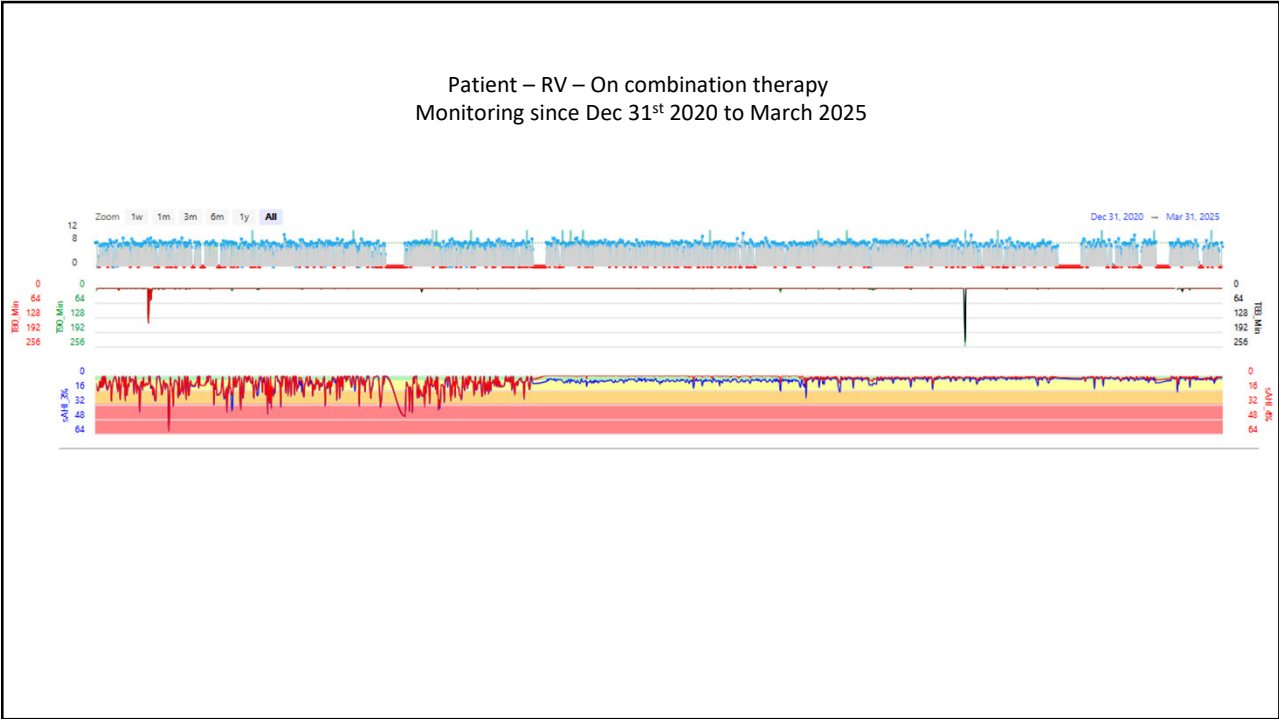
@mention a user or group to cha

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Dental Appliance Mono Therapy



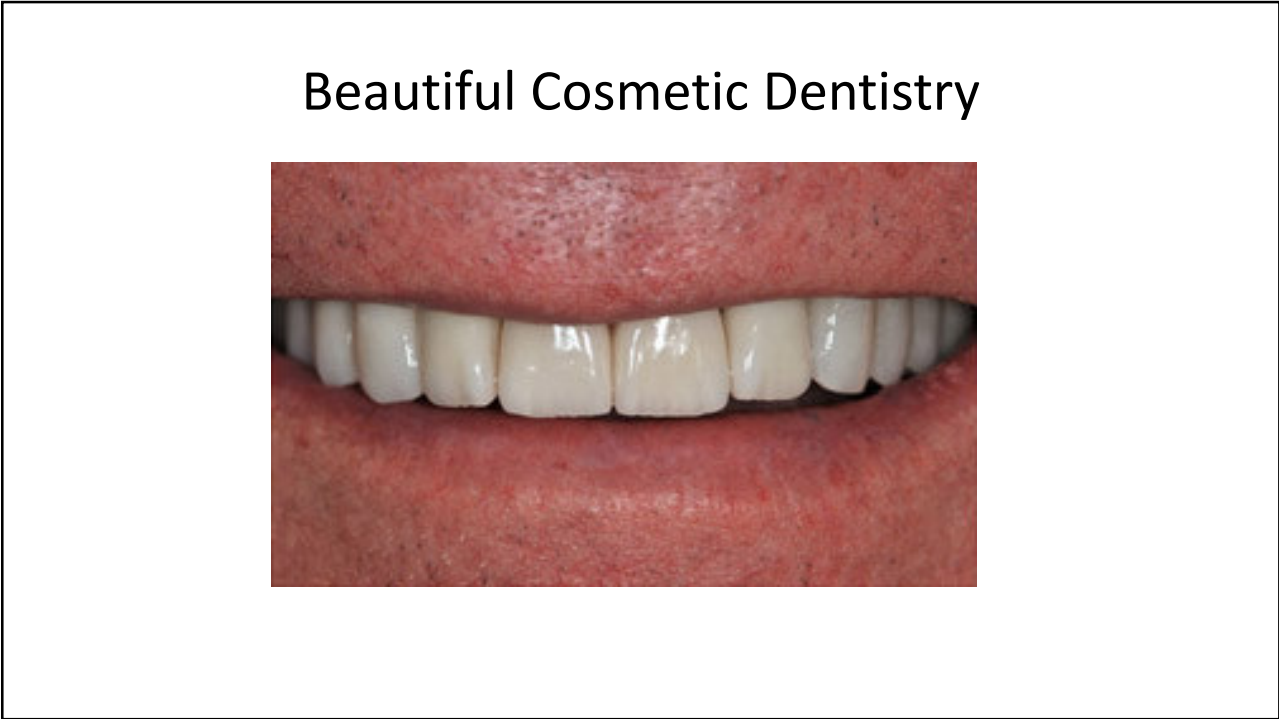
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Neck Circumference





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Rob Veis D.D.S
info@smlglobal.com
1-800-423-3270



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Sleep Education Consortium (SEC) partners with Learner+, a clinician-centric reflective learning platform that rewards CME/CE credits to busy clinicians anytime and anywhere learning happens. Learn more about how you can reflect to unlock credits below. [View CME Credit Info](#)

REFLECT NOW

<https://champions.learner.plus/sec/>

Oral appliances to treat OSA

What inspired you to reflect?

Pick the context and a clinically relevant concept or phrase that inspired you to reflect.

Reflective Learning Moment

Oral appliances to treat OSA

Step 1 of 4

Next