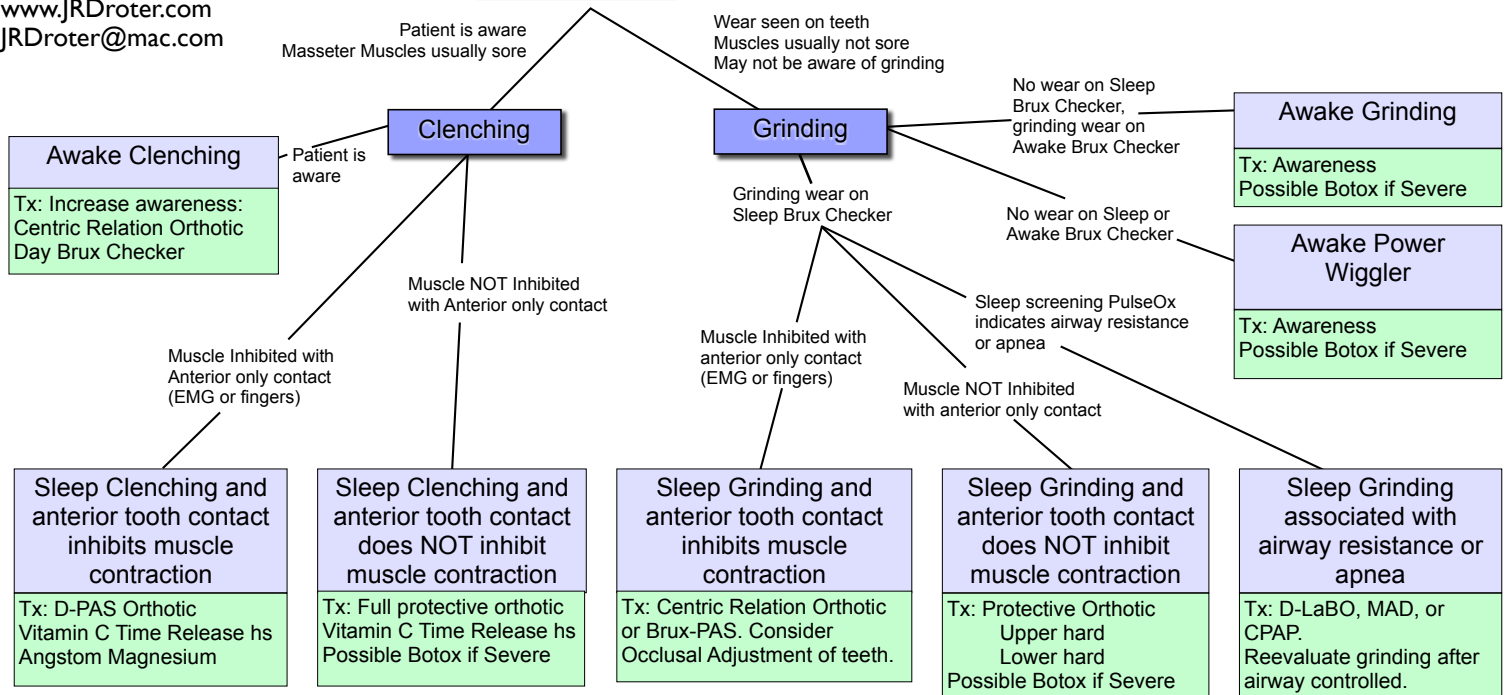


BRUXING: PARAFUNCTIONAL TOOTH CONTACT



An upper anterior stop orthotic is very effective in both diagnosing and controlling sleep clenching. Vertical dimension is opened a minimal amount (1mm), just enough so posterior teeth do not contact on clenching. Any tooth contact in excursions is not relevant as the patient does not move the jaw parafunctionally in excursions. A full coverage orthotic is contraindicated as it may increase the power of the clenching.

Taken before bedtime, antioxidants like time release vitamin C (NOW Vitamin C Sustained Release 1000 mg) will help protect the cartilage from hypoxia reperfusion injury on waking.



D-PAS: Diagnostic Palatal Anterior Stop

Vertical is opened a minimal amount (1mm). Natural Teeth will eventually contact in excursive movements.

These are difficult patients to treat as there is no way to decrease the forces with an orthotic. The benefit of an orthotic is questionable but a full coverage orthotic may help with force absorption.

The TMJ cartilage is being damaged from the continuous cartilage compression. Taken before bedtime, antioxidants like time release vitamin C (NOW Vitamin C Sustained Release 1000 mg) will help protect the cartilage from hypoxia reperfusion injury on waking.

Check the neck for signs of mechanical instability as a possible source of TMJ muscle bracing.

In severe cases, botox diffusion in masseter muscle may be beneficial.



A full coverage centric relation orthotic with anterior guidance will work well. A lower is preferred over an upper as it is more comfortable and less intrusive for most patients. It must be hard, fit solidly on the teeth, and not have any rocking or squishing movements. A reline of the orthotic is very beneficial to assure a proper fit. A dual arch anterior stop orthotic can also work well (Upper palatal anterior stop orthotic with a lower Essex, Brux-PAS)



Lower hard CR Orthotic



Brux-PAS with lower Essex

Anterior stop extends beyond incisal edges #8,9. All excursive contact on anterior stop



The goal is to protect the teeth and distribute the forces across as much surface area as possible. Upper is preferred as it reinforces the maxilla. My preference is a hard orthotic but a few patients prefer a soft guard.

In severe cases, botox diffusion in masseter muscle may be beneficial.

If there is wear on molars and none on anterior teeth they power wiggle, a combination of clenching and grinding.



Upper Hard CR Orthotic


Lateral Brux Orthotic




Sleep grinding can occur in response to microarousals in patients with upper airway resistance. A home sleep screening with a high resolution pulse oximeter (Patient Safety Inc. Sleep SAT Pulse Ox) is an effective way to identify patients who have airway related issues. Patients who may have Obstructive Sleep Apnea would be referred to a pulmonologist for a medical sleep study. Appropriate therapies are then prescribed depending on the severity of the airway issue. These include Lateral Bruxing Orthotic, Mandibular Advance Device, or CPAP. The sleep grinding needs to be reevaluated after the airway issues are resolved.



Narval CC



**Clenchers destroy the joint,
Grinders destroy the teeth**



Clenching
Painful Muscles
Patient is usually aware of clenching
Frenitis
Strong Masseters
See slight wear around tooth contacts
Damage TMJ cartilage

If patient is unaware of clenching-
Plant seed at hygiene visit
Do you clench?

Grinding
See tooth wear
Patient is usually not aware
Buttressing bone if teeth are tight
If tooth mobility, on excursions
Strong Masseters
Slight Soreness muscles
Usually no muscle pain

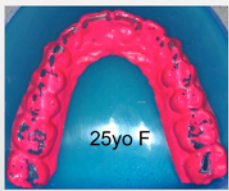
Parker Mahan-
"Women Hurt, Men destroy"

2. Does this occur awake or asleep?


Brux Checker
Great Lakes Orthodontics

0.1mm Mylar

Made on Biostar Machine



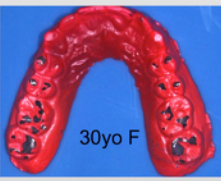
25yo F



29yo F



30yo F



Daytime Clenching- Clear Brux Checker
Increase awareness to break habit

Very thin: Similar to mylar used for composites




Great Lakes Orthodontics
Biostar Platzhalterfolie
Item Ref 3202.1

3. Are the TMJ muscles inhibited from full contraction with anterior only tooth contact?

Detect with EMG or muscle palpation- Clench full power on posterior teeth and then with D-PAS orthotic.

Patient with muscles inhibited by anterior only contact

	Clench MaxIC µV	Anterior Stop D-PAS µV
TA-R	100.6	15.7
TA-L	108.9	25.3
MM-R	115.4	25.5
MM-L	70.5	6.8

Major decrease in muscle power with D-PAS

Another Patient with muscles NOT inhibited by anterior only contact

	Clench MaxIC µV	Anterior Stop D-PAS µV
TA-R	82.2	77.9
TA-L	124.6	103.6
MM-R	185.0	169.0
MM-L	79.9	86.6

Muscle power same with D-PAS



Key Features of D-PAS

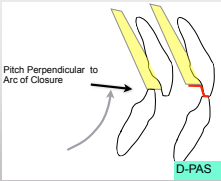

To Optimize Results:

- Relined so forces go into whole maxilla
- Pitch is perpendicular to arc of closure
- Minimal change in vertical
- Nothing wraps around the buccal (Every tooth is free to move buccally)

Must Reline
Most cases you will reline whole D-PAS
Can just reline anterior if good retention.
Must reline at least cuspid to cuspid.

Basically it is a relined upper Hawley Orthotic with no buccal restrictions, with an anterior stop added.
Similar Orthotics- Hawley with anterior stop, Kois, Cranham, Hegyi DATA


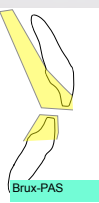
Treatment (Management) Uses
D-PAS
Diagnostic Palatal Anterior Stop Orthotic

Educational: Patient awareness of problem

Sleep Clenching with muscle inhibition:
D-PAS wear during sleep

Sleep Grinding with muscle inhibition:
Brux-PAS wear during sleep.
Increase vertical of D-PAS,
Add lower exsux

Assist in cranial bone alignment

Disordered Breathing Disease Progression

Disease Stage 1

Predisposing Factors

Small Airway

Tongue Tie, Lip Tie
Bottle Fed as Infant
Dysfunctional Swallow
Allergies
Nasal Obstruction
Large Tonsil
Large Adenoids
Large Tongue
Mid-face Deficient
Mandibular Deficient

Disease Stage 2

Compensation: Airway Maintained

Signs
Tongue Bracing
Indents in Tongue
Head Postured Forward
Jaw Postured Forward
Sleep Teeth Grinding
Sore Masseters
Sore Neck Muscles
Mouth Breathing

Symptoms
Facial Ache
Not Waking Rested
Daily Fatigue
Neck Soreness
Worn Teeth

Disease Stage 3

Sleep Airway Partial Collapse

Signs
All of stage 1 and 2 plus....
Upper Airway Resistance
2-4% Drop O₂ Saturation
RERA- Respiratory Arousal
↓ Growth Hormone

Symptoms
Heart Rate Fluctuation
Snoring or "Purring"
Weight Gain
Cognitive Impairment, ADD
Hyperactivity

Disease Stage 4

Sleep Airway Full collapse

Signs
All of stage 1, 2, 3 plus....
4%+ drop O₂ Saturation
Apnea
Cardiovascular Damage
Elevated BP
GERD

Symptoms
All of stage 2, 3 plus....
Worn Teeth

John R. Droter DDS

Disordered Breathing Disease Stage 4

OSA- Obstructive Sleep Apnea

AHI- Apnea Hypopnea Index

Apnea and Hypopnea events per hour

Apnea- Stop airflow for 10 seconds

Hypopnea- <50% airflow or 3%+ O₂ Desaturation

AHI 1-4 "Normal" ??

Signs
Apnea
4% drop O₂ Saturation
Cardiovascular Damage
Elevated BP
GERD

Symptoms
Not Waking Rested, Daily Fatigue
Cognitive Impairment

AHI 5-15 Mild OSA

AHI 15-30 Moderate OSA

AHI 30+ Severe

Irreversible Damage

John R. Droter DDS

Is there an airway issue?
(Upper Airway Resistance or Obstructive Sleep Apnea)

"Sleep Airway Screening"

High Resolution Pulse Oximetry


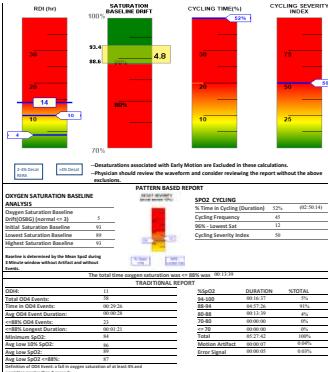
Data every 1 second average over 3 seconds




Patient Safety Inc.

SLEEP SAT **SATSCREEN**

Order Pulse Ox and Software: Go to my website or www.patientsafetyinc.com

Sleep SAT is the replacement for PULSOX 300i, Konica Minolta no longer made

Elastomer Pulls Right condyle forward out of fossa.
Moves the jaw to the **Left**.

Anterior Occlusal Stop opens the bite and provides vertical support.