**BRUXING: PARAFUNCTIONAL TOOTH CONTACT**

### Awake Clenching

Tx: Increase awareness: Centric Relation Orthotic
Day Brux Checker
Evaluate neck for stability
Eval for solid molar support

- Patient is aware
- Masseter Muscles usually sore

### Clenching

- Patient is aware
- Muscle NOT Inhibited with Anterior only contact

### Grinding

- Wear seen on teeth
- Muscles usually not sore
- May not be aware of grinding

- No wear on Sleep Brux Checker
- Grinding wear on Awake Brux Checker

### Sleep Clenching and anterior tooth contact

***Inhibits muscle contraction***

Tx: D-PAS Orthotic
Vitamin C Time Release hs

### Sleep Clenching and anterior tooth contact

***Does NOT inhibit muscle contraction***

Tx: ??? Dental Orthotic
Vitamin C Time Release hs

Check neck for instability

### Sleep Grinding and anterior tooth contact

***Inhibits muscle contraction***

Tx: Centric Relation Orthotic
with anterior guidance or Brux-PAS. Consider Occlusal Adjustment of teeth.

### Sleep Grinding and anterior tooth contact

***Does NOT inhibit muscle contraction***

Tx: Protective Orthotic
Upper hard
Lower hard
Upper hard/soft
May also grind awake

### Sleep Grinding associated with airway resistance or apnea

Tx: Medical grade sleep test with EMG then sleep airway management. Reevaluate grading after airway controlled.

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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.

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.

- 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.

- 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. The lower arch is contained within the upper and can better resist excessive force. Material may be hard, hard with a soft liner, or soft rubber. My preference is a hard orthotic but patients may prefer one material over the other. This is the only indication for a hard/soft orthotic. The hard/soft orthotic is often mis-prescribed by many practitioners.

- 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.

### Narval CC

Myerson EMA

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Sleep grinding can occur in response to microarousals in patients with upper airway resistance (snoring) or with obstructive sleep apnea. A home sleep screening with a high resolution pulse oximeter (PULSOX 300i, Konica Minolta with data analysis Patient Safety, Inc.) is an effective way to identify patients who may have airway related grinding. Patients who have signs and symptoms of airway deficiencies are then referred to a pulmonologist for a medical sleep study. Appropriate therapies are then prescribed which may include CPAP or a dental mandibular advancement orthotic. The sleep grinding needs to be reevaluated after the airway issues are have been resolved.
Sleep Grinding with muscle inhibition:
Sleep Clenching with muscle inhibition:

Educational: Patient awareness of problem
Diagnostic Palatal Anterior Stop Orthotic
D-PAS
Treatment (Management) Uses

Symptoms
Daytime head forward posture
Growth Hormone Suppression
Cognitive Impairment
Daily Fatigue
Not Waking Rested

Heart Rate Elevation and Fluctuations
RERA- Respiratory Related Arousals
Sore Masseters
Tongue Bracing- Indents in tongue
Sleep Bruxing (grinding)- Tooth Wear

Add lower mylar
Increase vertical of D-PAS, Brux-PAS wear during sleep.

“Adaptation” - Airway maintained but:
Disease Stage 1 and 2 Disease Stage 3 Disease Stage 4

Similar Orthotics- Hawley with anterior stop, Kois, Cranham, Hegyi

Frontal view orthotic in Arc of Closure

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 lease 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
D-PAS

Symptoms
Cognitive Impairment
Daily Fatigue
Not Waking Rested
Snoring

2% drop O2 Saturation
All of stage 1 and 2

Signs
GERD
Elevated BP
Cardiovascular Damage
Cognitive Impairment
Daily Fatigue
Not Waking Rested
Snoring
Apnea

3+% drop O2 Saturation
All of stage 1, 2, 3

Sleep Disordered Breathing Disease Progression

Disease Stage 1 and 2
“Adaptation” - Airway maintained but:

Sleep Bruising (grinding)- Tooth Wear Tongue Bracing- Indents in tongue Bone Masseters RERA- Respiratory Related Arousals Heart Rate Elevation and Fluctuations Growth Hormone Suppression Daytime head forward posture

Symptoms
Not Waking Rested Daily Fatigue Cognitive Impairment

Sleep 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- 3+% O2 Desaturation

Irreversible Damage

AHI 1-4
“AHI Normal” ???
AHI 5-15
Moderate OSA
AHI 15-30
Severe

PULLSOX 396i, Konica Minolta with data analysis: Patient Safety, Inc.
Order PULSOX: Go to my website
@doctorlinks.com... Doctor Links

High Resolution Pulse Oximetry

PATTERN BASED REPORT
TRADITIONAL REPORT

PATIENT Name: DOB:
WEIGHT (lb): NECK SIZE:
PATIENT Phone:

ODI4:
Persisting greater than 3 seconds.
Definition of
Avg Low SpO2 <=88%:
Avg Low SpO2:
Avg Low 10% SpO2:
Minimum SpO2:
<=88% Longest Duration:
Avg OD4 Event Duration:
Time in OD4 Events:
Total OD4 Events:

RERA
4%
%Desat

Oct 03, 1963

\[0.04\% \text{ O2 Desat} \]

96% - Lowest Sat
Cycling Frequency
% Time in Cycling (Duration)
SPO2 CYCLING

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