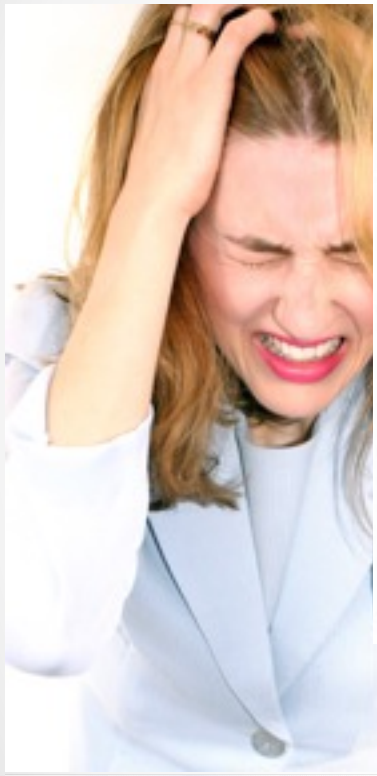
Parafunction…
or Protective Function

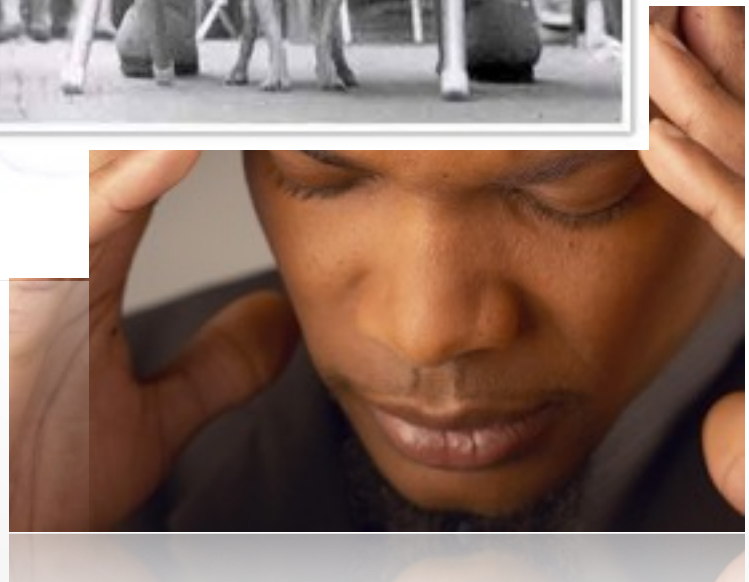
Jamison R. Spencer, DMD, MS

Past President, American Academy of Craniofacial Pain
Adjunct Faculty, Tufts University, Craniofacial Pain
Diplomate, American Board of Dental Sleep Medicine
Diplomate, American Board of Craniofacial Pain

Why do people clench and grind their teeth?




ESPRESSO
CONCENTRATE
Need ASAP!



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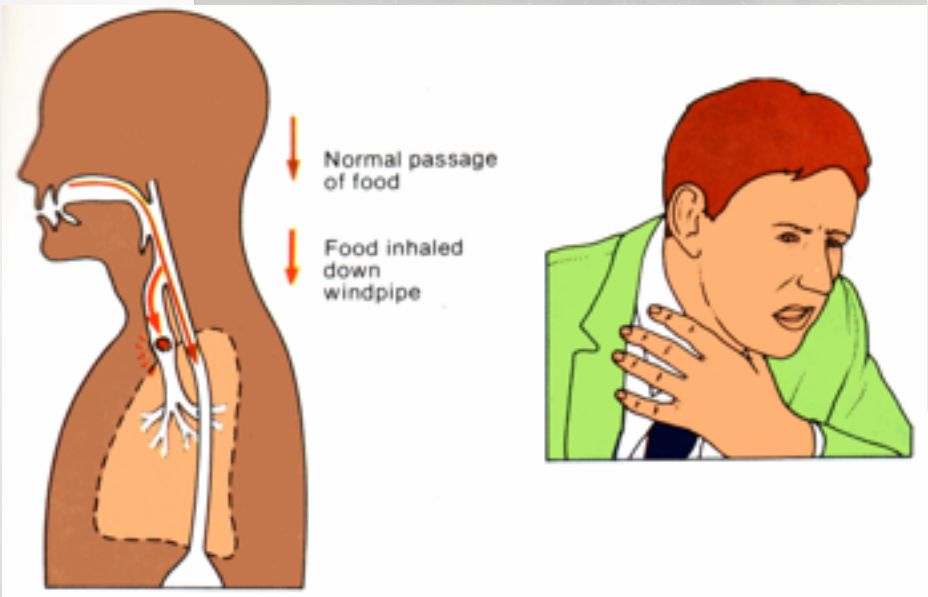
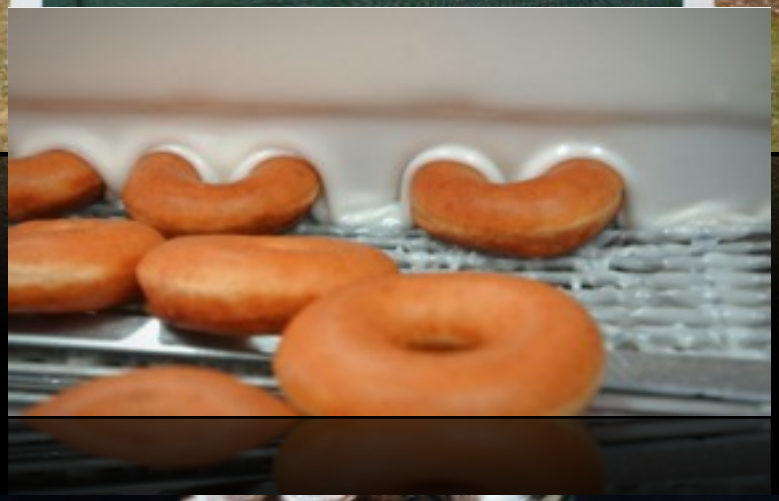



Idaho Potatoes
GROWN IN
IDAHO


Corn


Welcome
To
North Carolina



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TMJ

SnoreByte

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Family Dentistry

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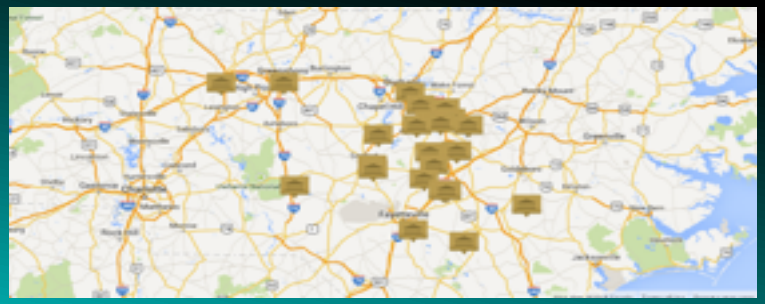
Est. 1985



Tufts
UNIVERSITY
School of
Dental Medicine

Parafunction

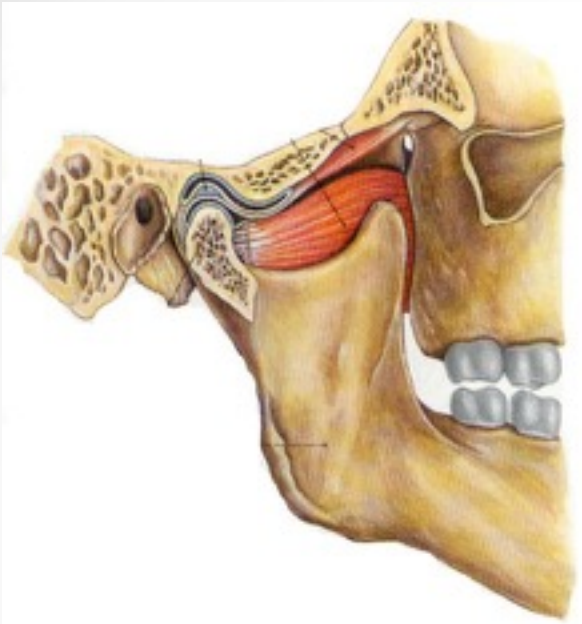
- Physical behavior that is without functional purpose and may be potentially harmful.

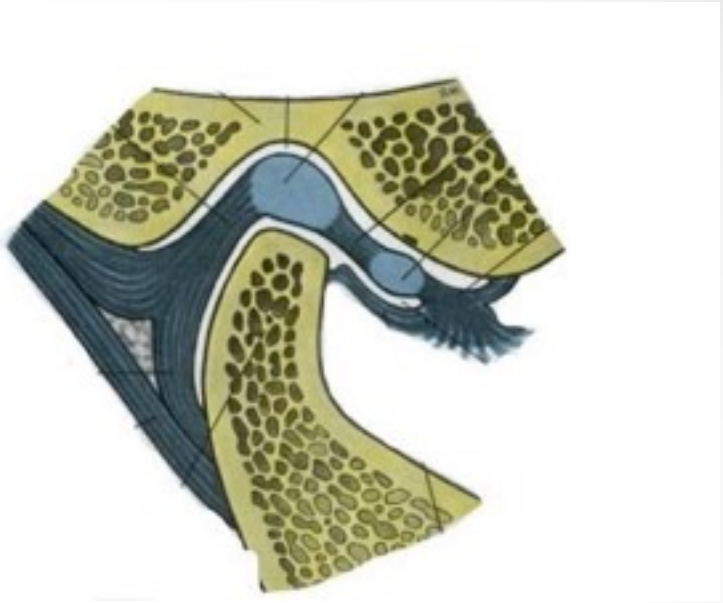
What might parafunction lead to?

TMJ Disorders

(and "headache")

Capsulitis

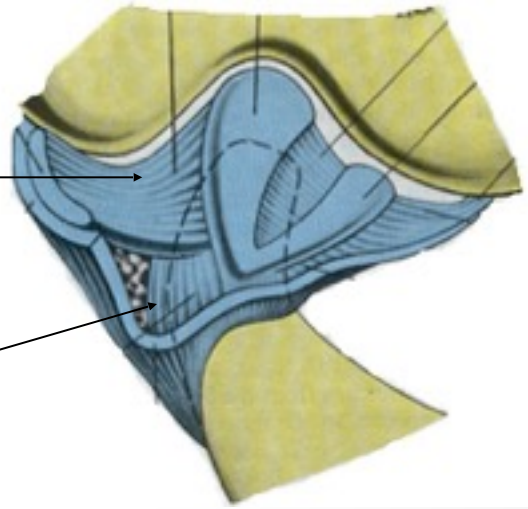




“RETRODISCAL PAD”

Posterior temporal attachment or “superior lamina”

Posterior mandibular attachment or “inferior lamina”



Capsulitis

- Diagnosis
  - History of Trauma
  - Continuous TMJ Pain
  - Tenderness to Palpation
  - ROM not necessarily reduced
  - Acute malocclusion on injured side
  - Pain with Clenching
  - **No pain with clenching on a tongue depressor**

Capsulitis

- Treatment
  - Anti-inflammatories
  - Physical Therapy
  - Aqualizer or soft splint
  - Hard splint if necessary

Capsulitis Treatment

- Anti-inflammatories
  - 600 mg Ibuprofen q6h for 4-7 days
  - Medrol dose pack (methylprednisolone)

Capsulitis Treatment

- Iontophoresis
  - A non-invasive method of pushing medication transdermally using a charged pad.
- Phonophoreis
  - A non-invasive method of pushing medication transdermally using ultrasound.


Phoresor II Auto

Capsulitis Treatment

- Splint therapy
  - Any splint for acute capsulitis should be temporary—for use until the inflammation is resolved.
  - The perfect splint for a capsulitis case would self adjust as the inflammation reduces…

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Float away tension, muscle pain and headaches.

- PRE-MADE, READY TO INSERT ORAL SPLINT
  Fast, No Waiting, Boiling or Fitting
- INCREASE YOUR SUCCESS TREATING:
  Headache, TMJ, Tinnitus, Neck and Shoulder Pain

The Aqualizer's water system perfectly balances and cushions the bite. Muscles relax, moving the jaw into the most comfortable position stopping the occlusal trigger of spasm and referred pain throughout the head, neck and shoulders.

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(1-800-435-7863)


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AQUALIZER ultra


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Capsulitis Treatment

- Splint therapy
  - Once the initial capsulitis has resolved, a nightguard or daysplint (or both) may be indicated to reduce adverse joint loading.

Capsulitis Recap

- Pain in/around the TM joint
- Posterior open bite
- Pain on trying to occlude
- No pain biting on a tongue blade on the affected side

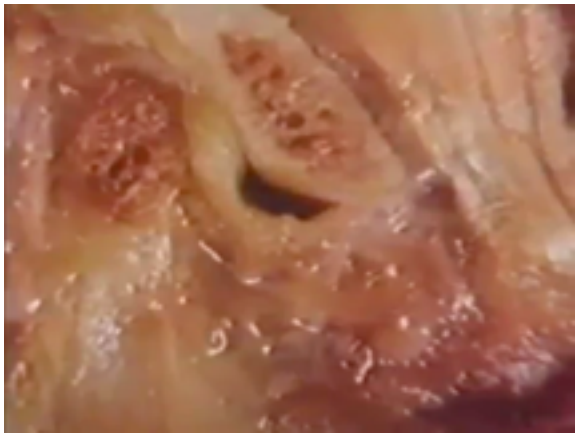
- Anti-inflammatories and an Aqualizer

TMJ Disorders

- Capsulitis
- Internal Derangements

Normal

RDD



NRDD

Internal Derangements

DJD

Dr. Per-Lennart Westesson and Dr. Lars Eriksson University of Lund, Sweden.

Internal Derangements

- A (Very) Simplistic Overview
  - Reducing Disc Displacement
  - Non-Reducing Disc Displacement

The Normal TM Joint

Discal Dislocation with Reduction

A brief discussion of…

Centric Relation

GPT 5th Edition 1987

- "the maxillomandibular relationship in which the condyles articulate with the thinnest avascular portion of their respective disks with the complex in the **anterior-superior position** against the shapes of the articular eminencies."

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Discal Dislocation without Reduction

Discal Dislocation without Reduction

- Diagnosis
  - Based on History
  - Based on History plus Imaging
    - MRI
    - Arthrogram

Discal Dislocation without Reduction

- Diagnosis Based on History
  - Maximum opening of approximately 26mm.
  - Typically deflection to the affected side.
  - History of reducing disc displacement.
  - Often, history of locking episodes.
  - History of a traumatic event (accident, injury, iatrogenic, etc.), or the patient will usually wake locked.

Macro Trauma

Micro Trauma

0.8 mm Airway!!!

Discal Dislocation without Reduction

- Acute
  - Sudden onset with pain and swelling
  - Pain with forced maximum intercuspation
  - Deflection to the affected side on opening
  - Maximum opening is usually around 26mm

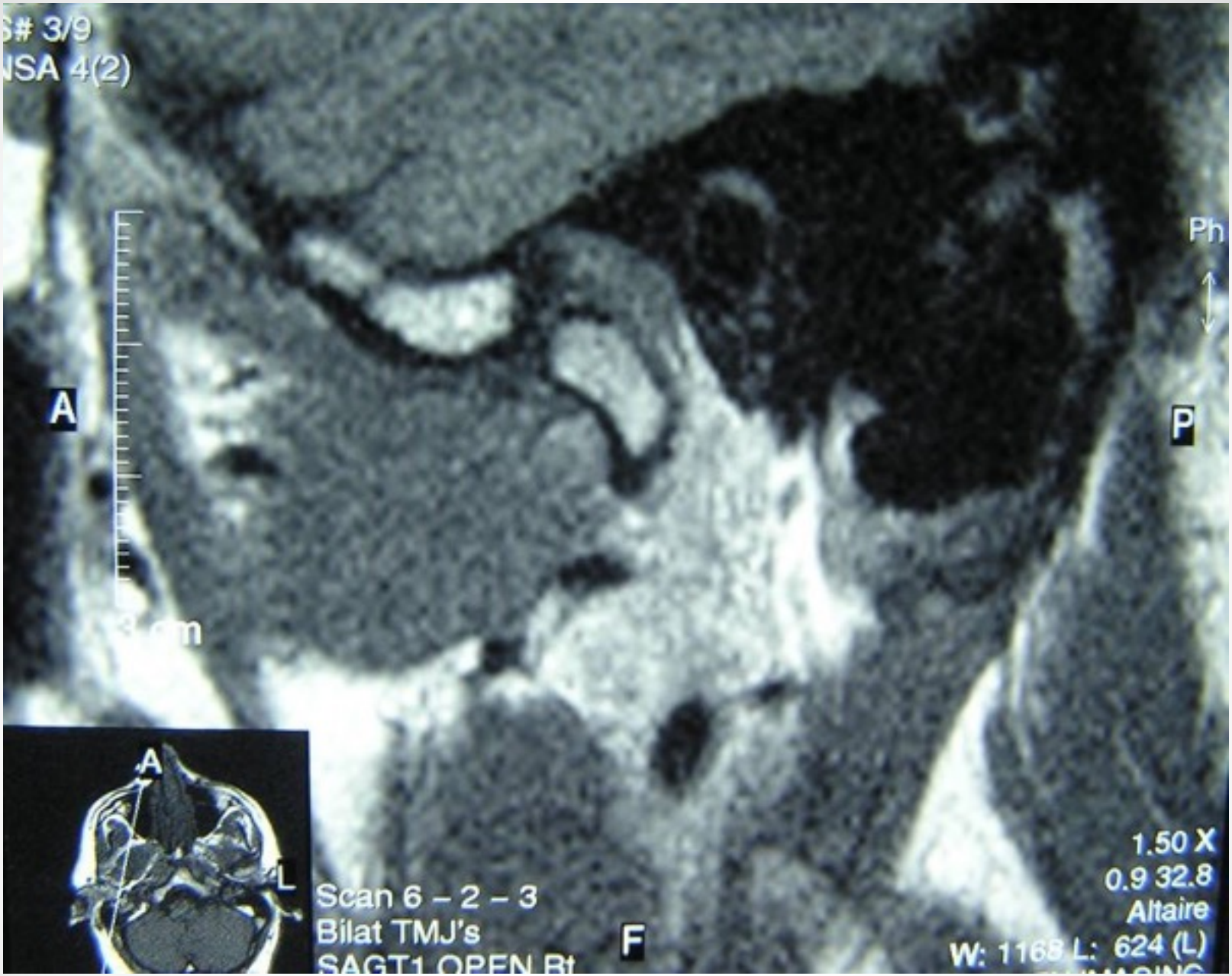
Discal Dislocation without Reduction

- Chronic
  - History of joint clicking
  - History of reduced range of motion (usually in the 30's)
  - Usually no pain

Diagnostic Imaging

- MRI
  - Needed to absolutely confirm DDw/oR.
  - Critical to have the MRI taken correctly.
    - Write the prescription for closed and wide open views.
    - Provide a bite block for the open view.
    - Read the film yourself and discuss with the radiologist if you disagree with the interpretation.

Right Closed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Altaire
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Right Open


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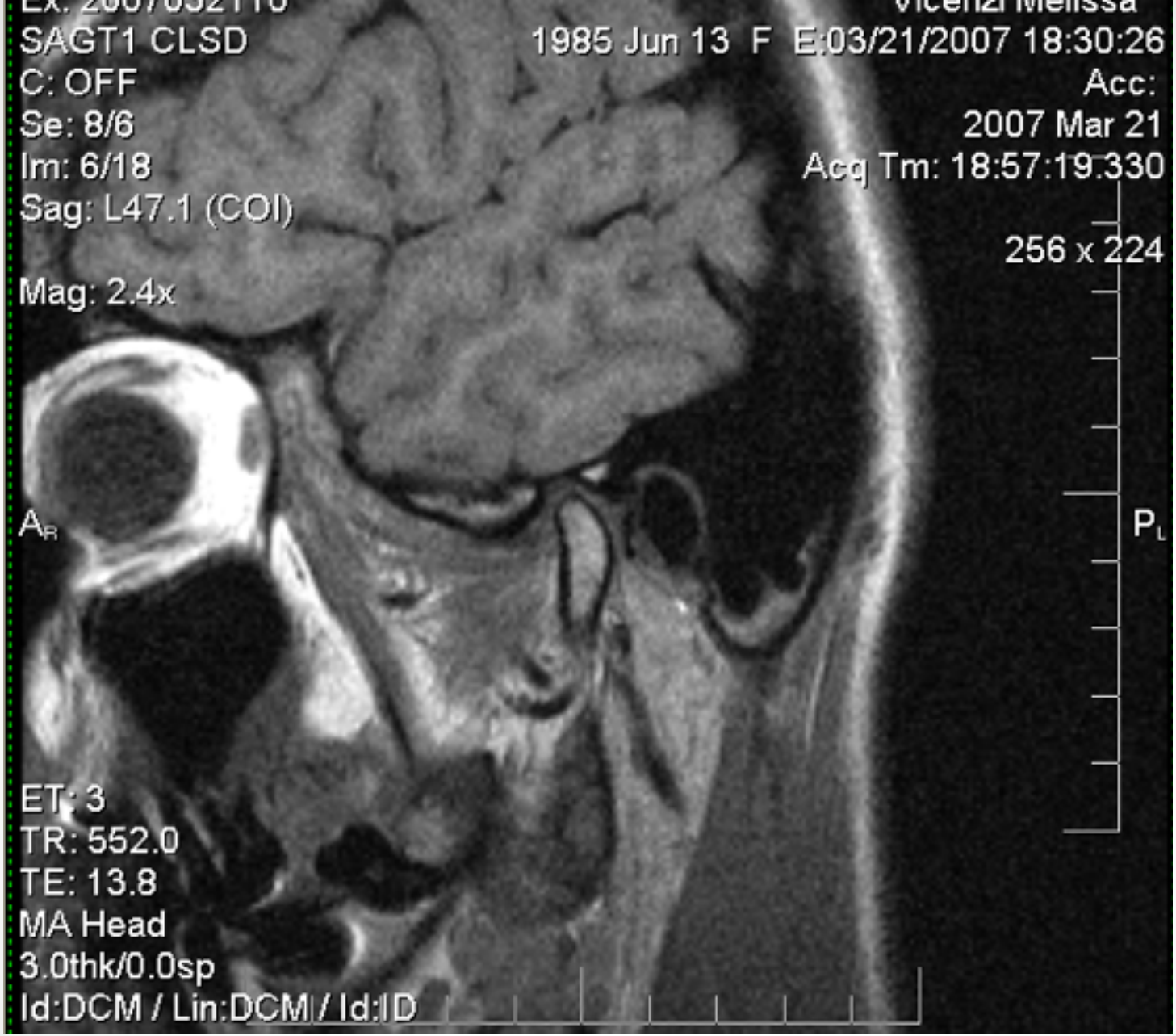
ADVANCED OPEN IMAGING

Left Closed

Left Open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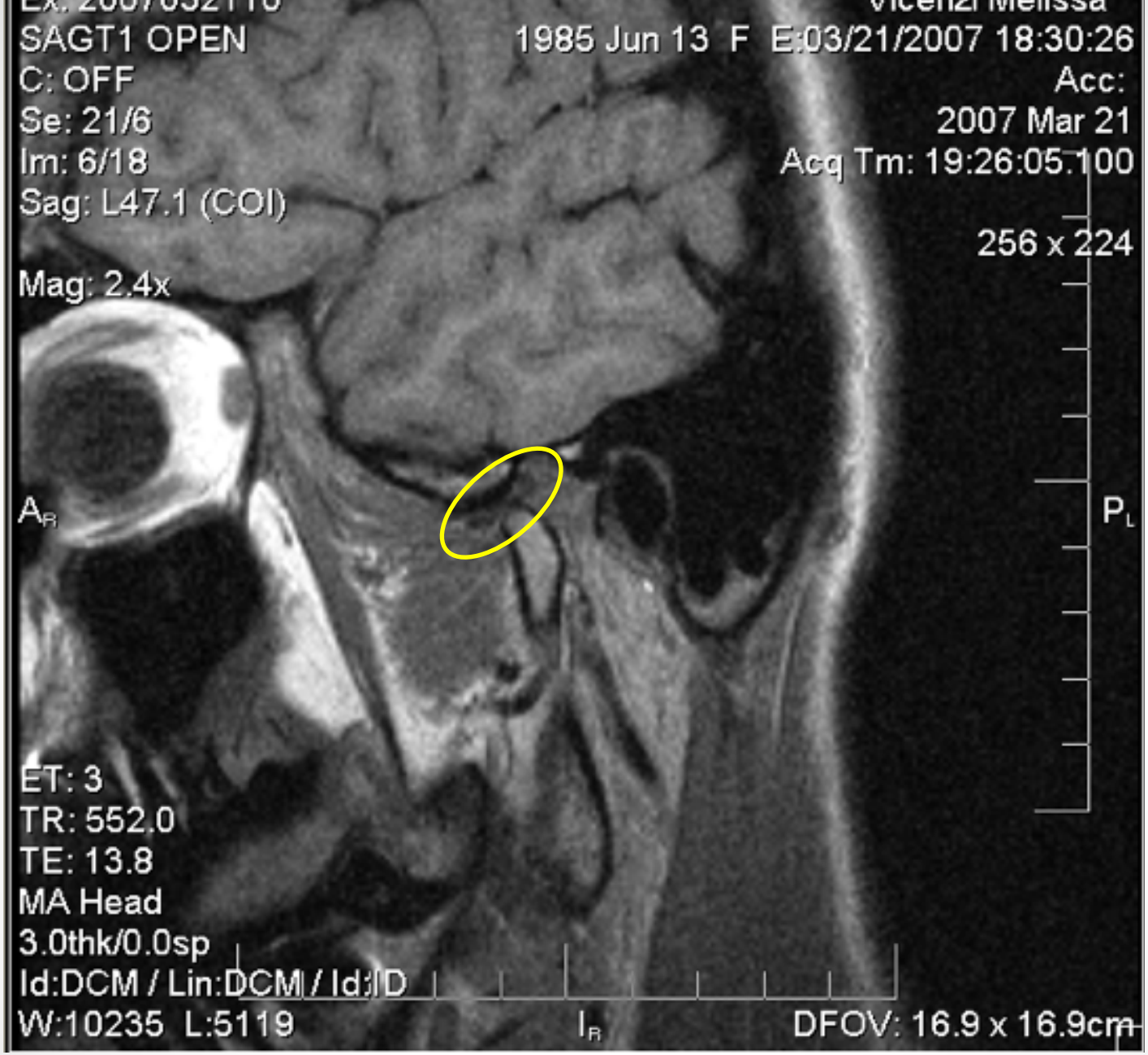
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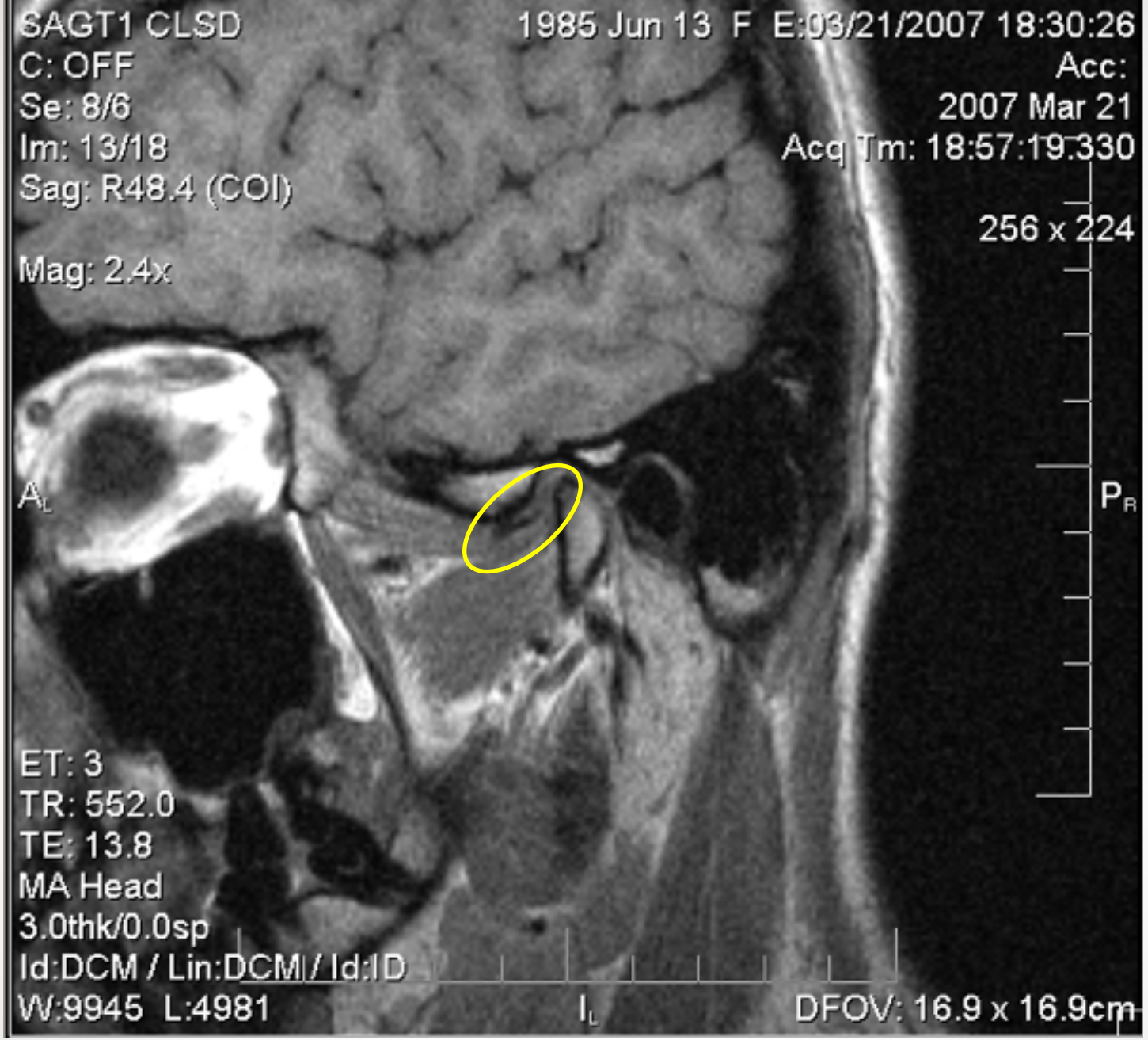
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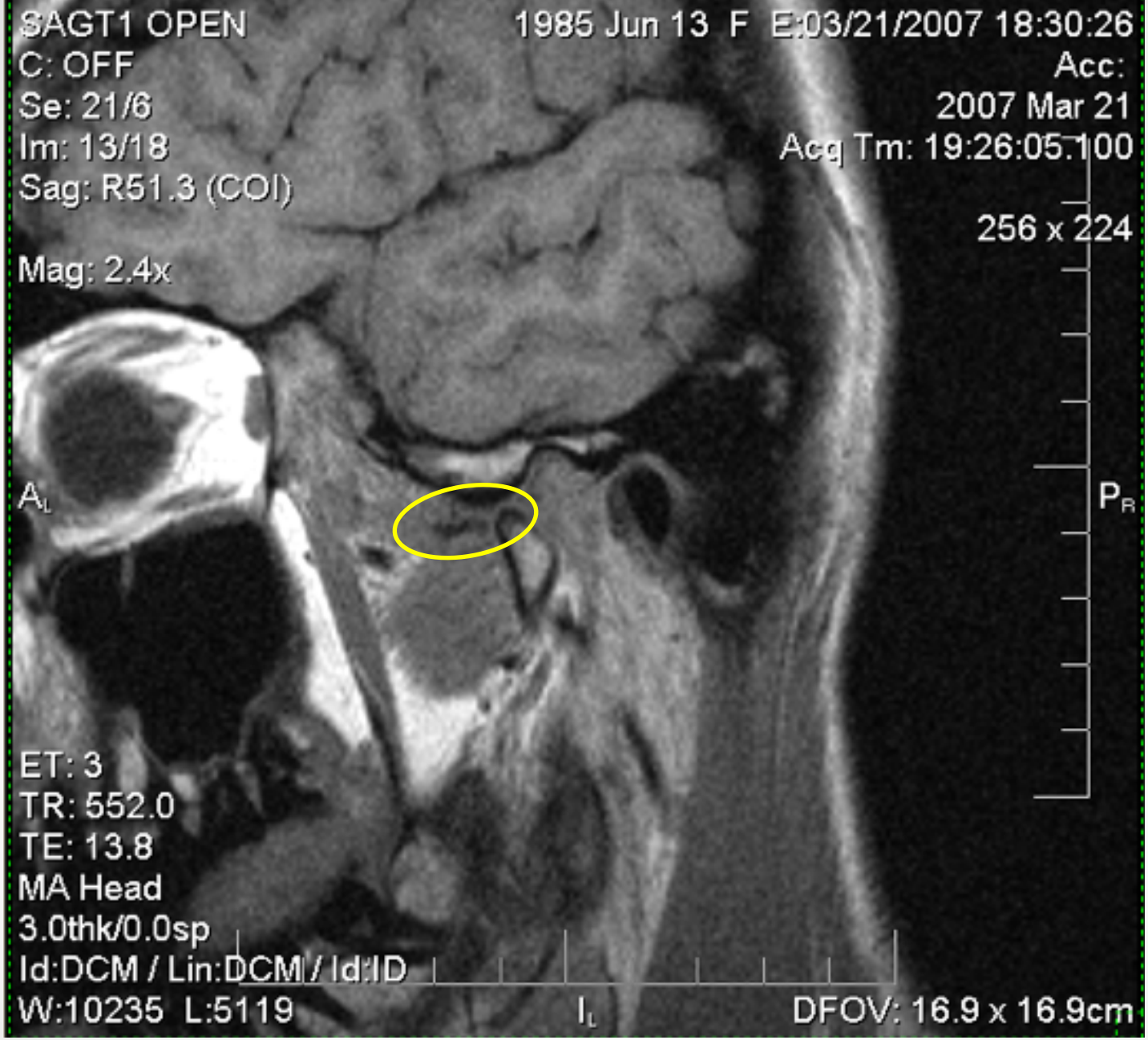
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MA Head
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DFOV: 16.9 x 16.9cm

Discal Dislocation without Reduction

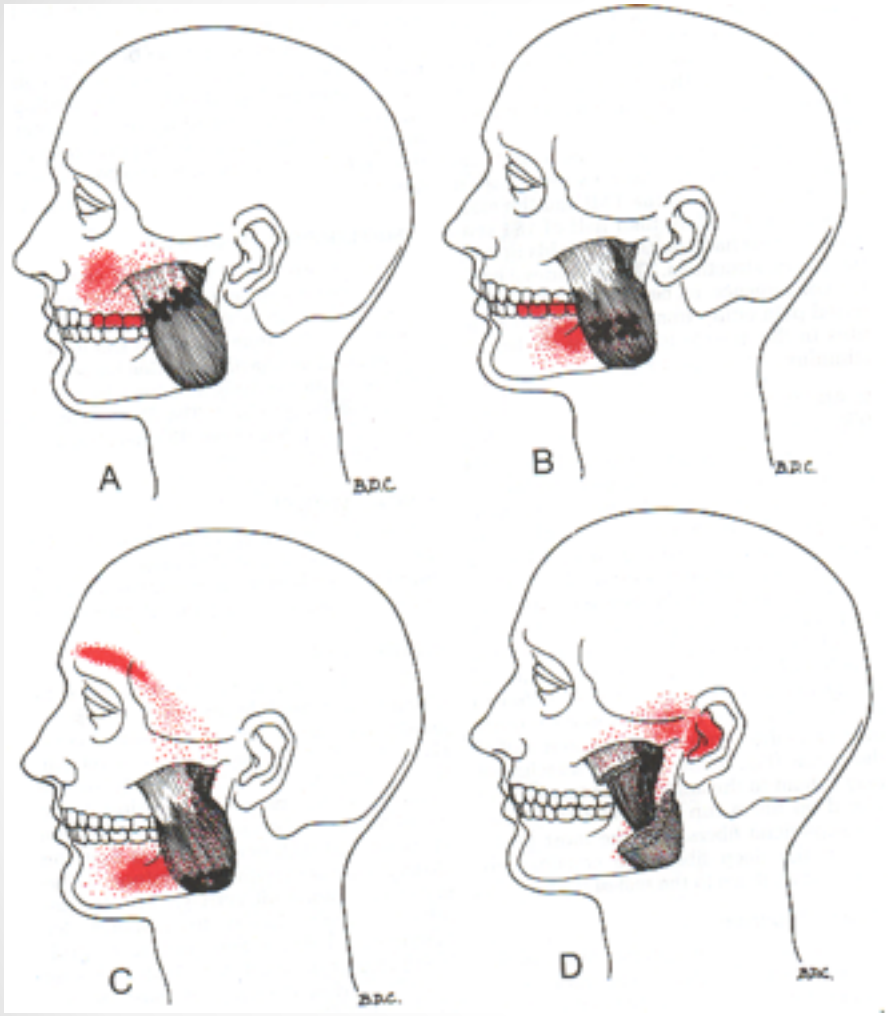
- Treatment
  - Acute
    - Attempt to Reduce (yourself or give the patient exercises)
    - Treat with splint, PT and meds
  - Chronic
    - Attempt to Reduce?
    - No treatment
    - Palliative (meds, home PT, splint)

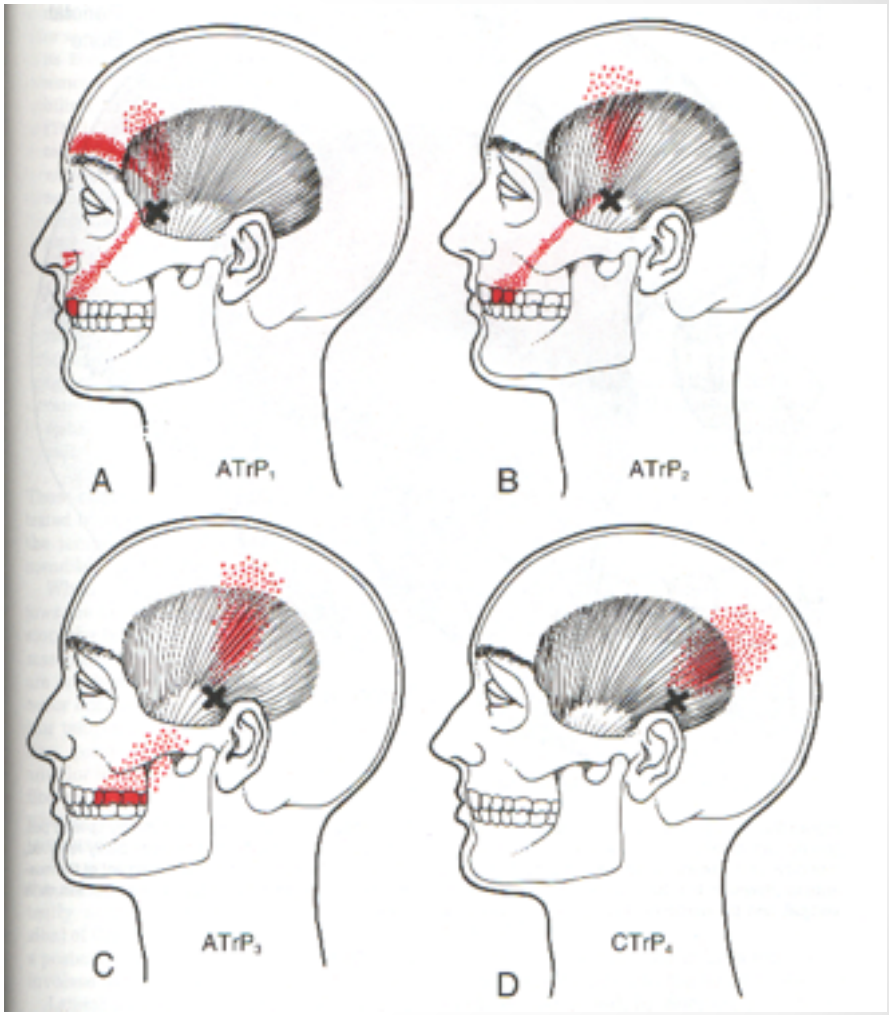
TMJ Disorders

Capsulitis

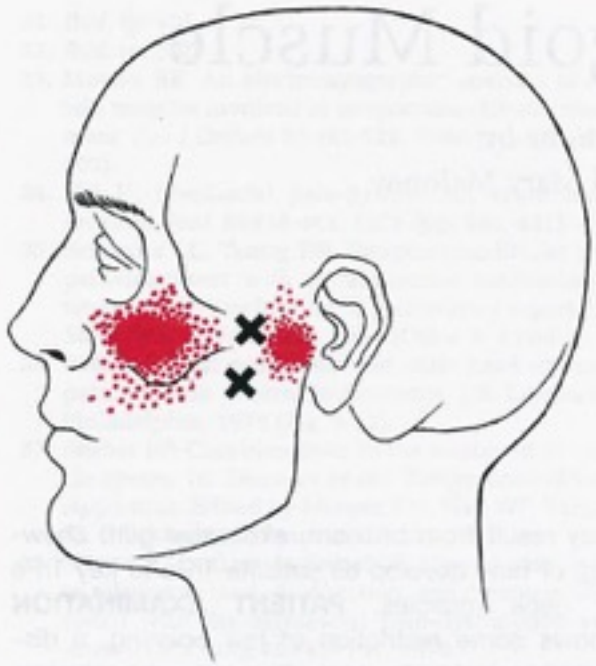
Internal Derangements

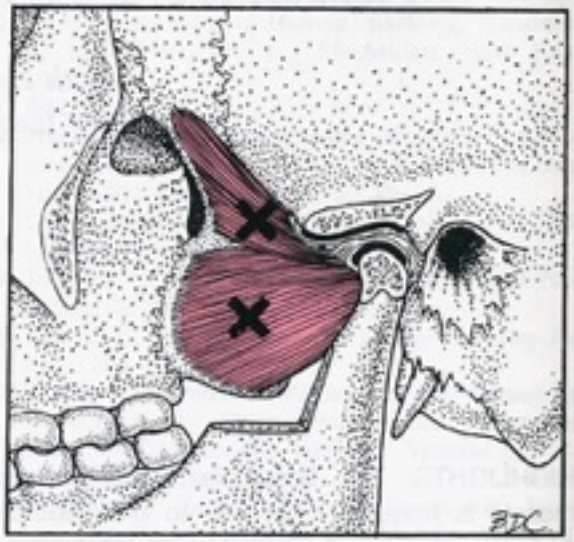
Myofascial Pain Dysfunction

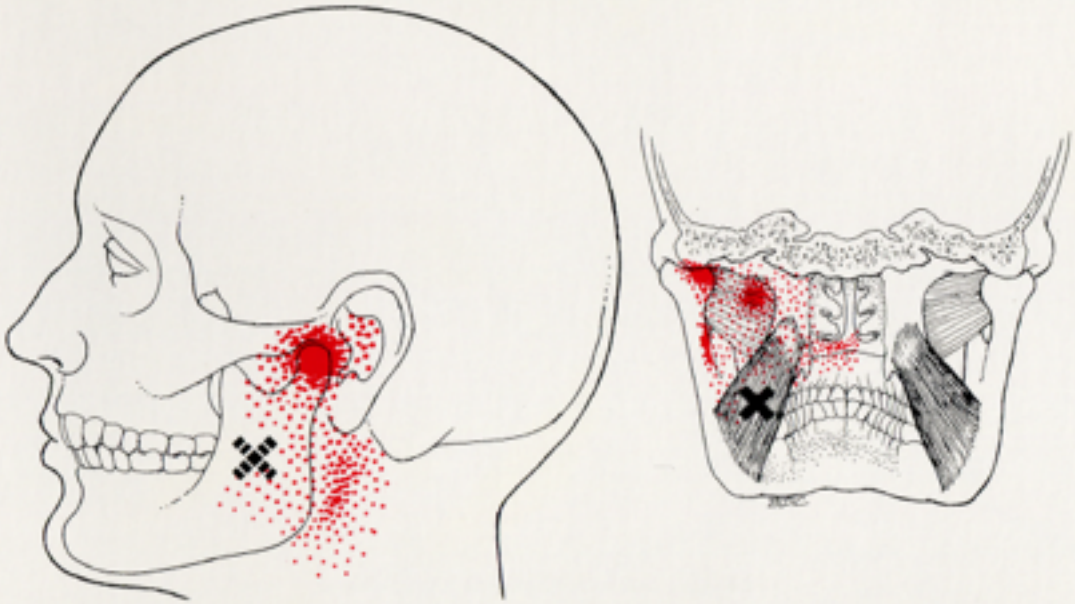




- Travell & Simons' Myofascial Pain and Dysfunction







- Travell & Simons' Myofascial Pain and Dysfunction

But what if it isn't parafunction?

- A new paradigm regarding the etiology of many TMJ Disorders and Craniofacial Pain Problems

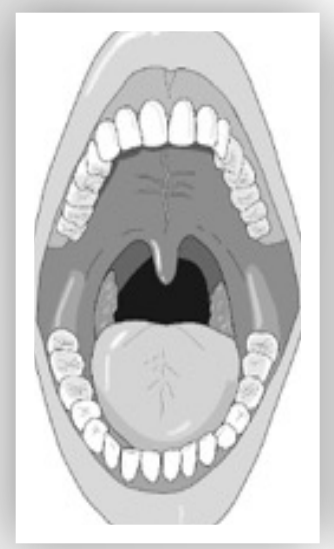
Protective Function?

- Physical behavior that is intended, whether conscious or subconscious, to improve survival.

Pharyngeal Patency

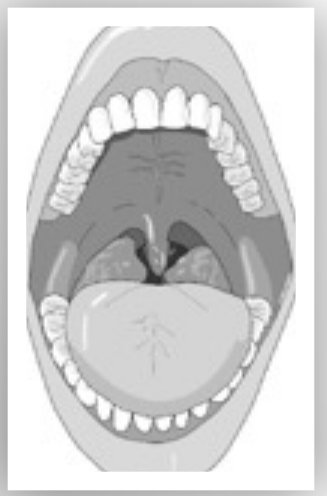
- While awake, the pharynx is always held open except during swallowing.
- This is accomplished by reflexes controlling the activity of pharyngeal muscles.
- During sleep, reflex control of the pharyngeal muscles is lost.
- During sleep, the pharyngeal airway can narrow severely or close completely.

Normal vs. Obstructed Airway



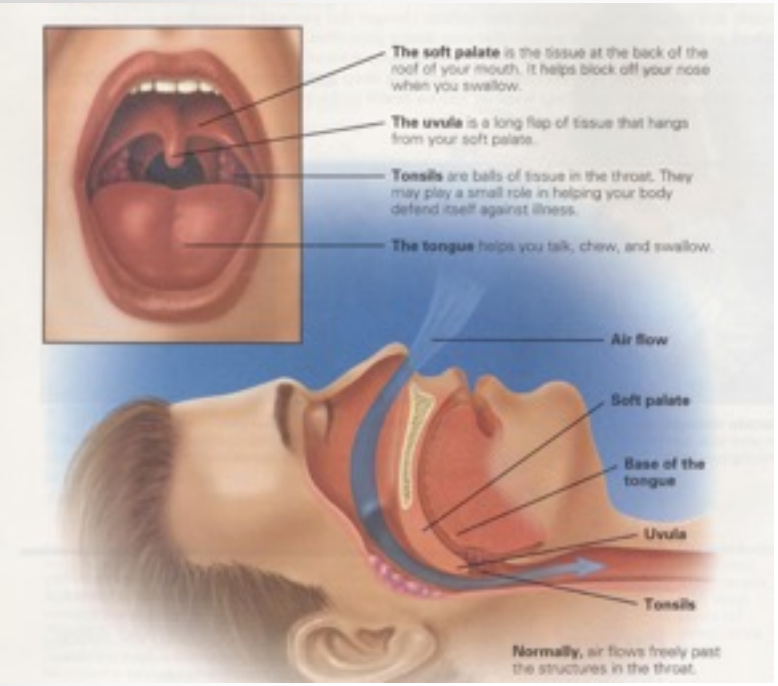
Normal Airway

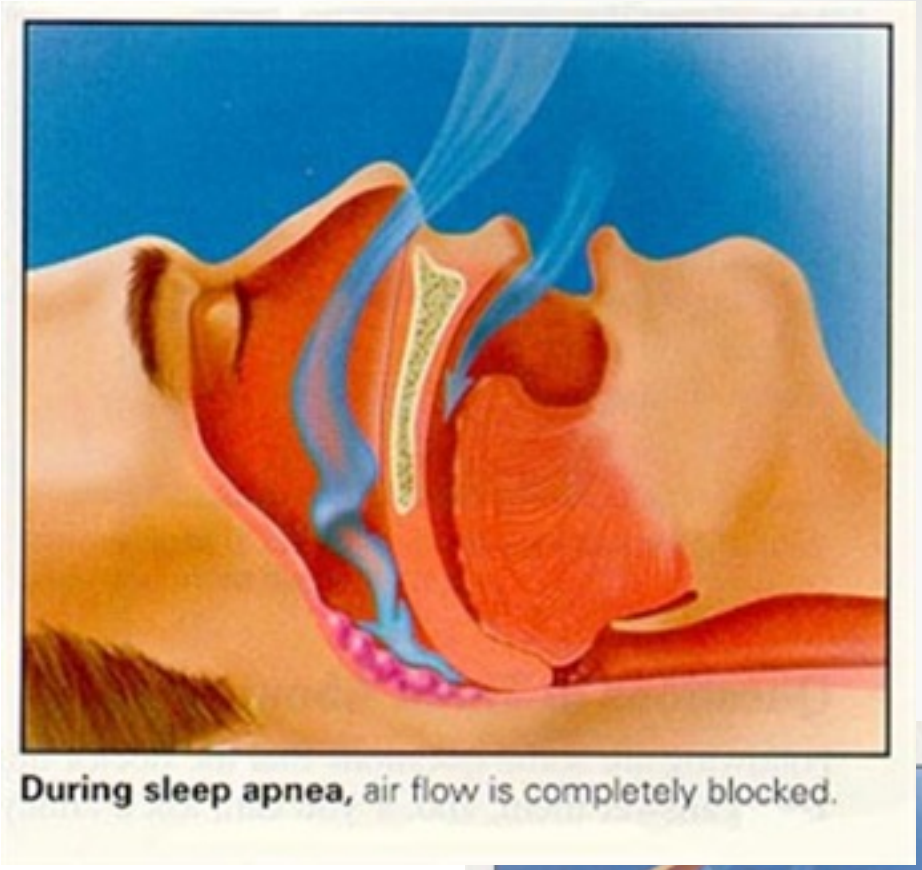
- Air passes through the nose and flexible structures in the back of the throat (soft palate, uvula and tongue).
- During sleep the muscles relax but, normally, the airway stays open.



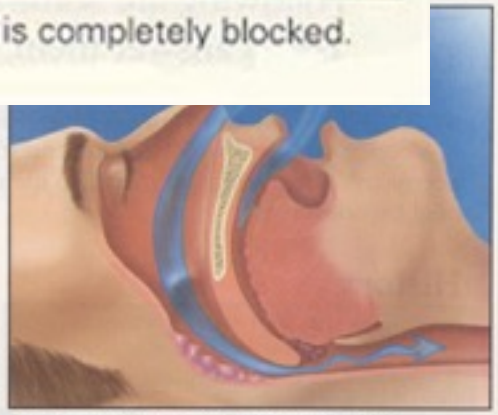
Obstructed Airway

- OSA is a situation in which the entire upper airway is blocked causing air flow to stop.
- Snoring is the vibration of the pharyngeal soft tissues as air passes through.





During sleep apnea, air flow is completely blocked.



During snoring, air flow is partially blocked.

Nocturnal Bruxism

- Proposed Mechanisms

- Chest. 2008 Aug;134(2):332-7. Epub 2008 May 19.
- A significant increase in breathing amplitude precedes sleep bruxism.
- Khoury S, Rouleau GA, Rompré PH, Mayer P, Montplaisir JY, Lavigne GJ.

- BACKGROUND: Sleep bruxism (SB) is a stereotyped movement disorder that is characterized by rhythmic masticatory muscle activity (RMMA) and tooth grinding.
- METHODS: Polygraphic sleep recordings of 20 SB subjects without any sleep-related breathing disorders were analyzed for changes in respiration.
- RESULTS: A positive and significant correlation was found between the frequencies of RMMA episodes and the amplitude of breath ($R(2) = 0.26$; $p = 0.02$). The amplitude of respiratory changes was 11 times higher when arousal was associated with RMMA in comparison to arousal alone.

- CONCLUSIONS: To our knowledge, this is the first report showing that RMMA-SB muscle activity is associated with a rise in respiration within arousal.

- Arch Oral Biol. 2007 Apr;52(4):381-4. Epub 2007 Feb 20.
- Genesis of sleep bruxism: motor and autonomic-cardiac interactions.
- Lavigne GJ, Huynh N, Kato T, Okura K, Adachi K, Yao D, Sessle B.

- We showed that RMMA are secondary to a sequence of events in relation to sleep micro-arousals: the heart (increase in autonomic sympathetic activity) and brain are activated in the minutes and seconds, respectively, before the onset of activity in suprahyoid muscles and finally by RMMA in jaw closing masseter or temporalis muscles.

- The above results suggest that the onset of RMMA and SB episodes during sleep are under the influences of brief and transient activity of the brainstem arousal-reticular ascending system contributing to the increase of activity in autonomic-cardiac and motor modulatory networks.

- Sleep. 2003 Jun 15;26(4):461-5.
- Association between sleep bruxism, swallowing-related laryngeal movement, and sleep positions.
- Miyawaki S, Lavigne GJ, Pierre M, Guitard F, Montplaisir JY, Kato T.

- Nine patients with sleep bruxism and 7 normal subjects were matched for age and sex.

- In sleep bruxism patients, although sleeping time did not differ between the 2 sleeping body positions, 74% of rhythmic masticatory muscle activity and swallowing events were scored in the supine position compared to 23% in the lateral decubitus position.

Nocturnal Bruxism

- Relationship to Sleep Apnea

- Chest. 1986 Sep;90(3):424-9.
- Effect of sleep position on sleep apnea and parafunctional activity.
- Phillips BA, Okeson J, Paesani D, Gilmore R.

- Because sleep apnea leads to sleep arousals, and because sleep arousals are thought to result in increased parafunctional activity, we undertook the present study to determine the relationship between sleep apnea and parafunctional activity.

- 24 patients

- Nocturnal clenching was slightly higher in patients with sleep apnea than those without (12.2 vs 7.6 clenches/hr, p = 0.18), and there was a correlation between the clench index (CI) and apnea plus hypopnea index (A + HI)

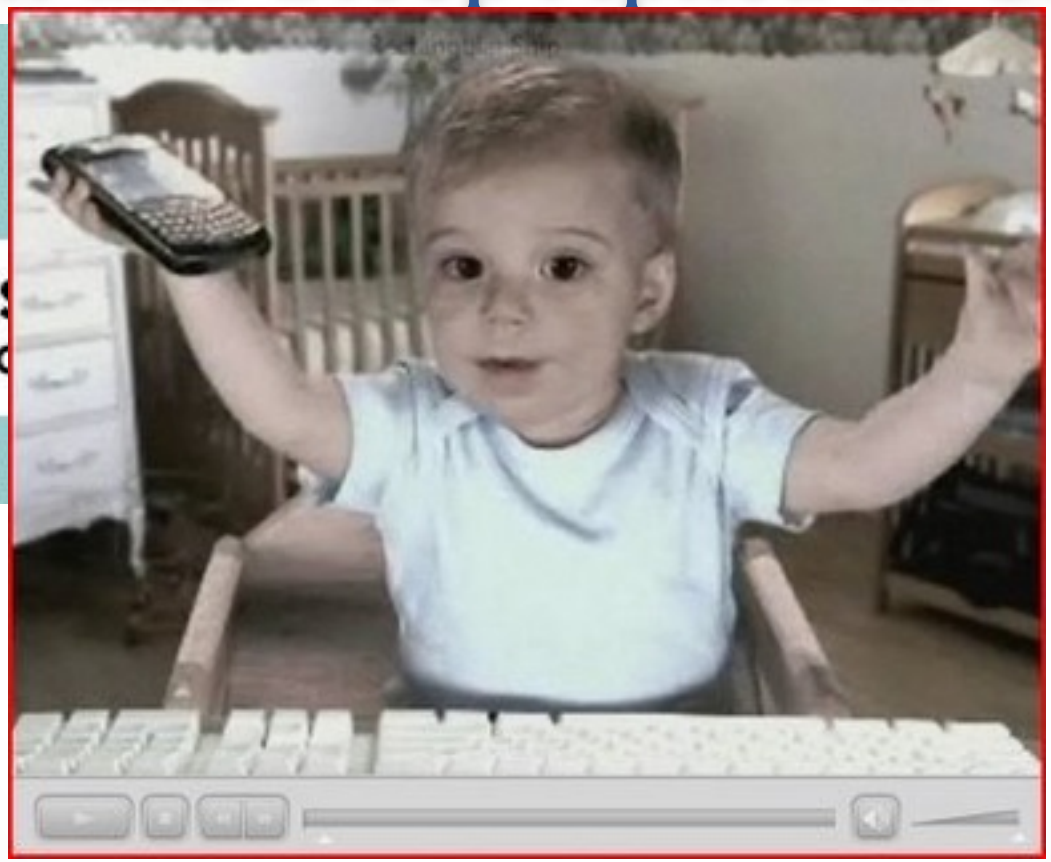
- There were significant falls in both the A + HI (64.4 +/- 28.8 vs 36.5 +/- 36.7, p = 0.02) and CI (12.5 +/- 12.1 vs 7.0 +/- 8.6, p = 0.04) in the lateral decubitus vs supine sleeping positions.

- Chest. 1986 Sep;90(3):424-9.
- Effect of sleep position on sleep apnea and parafunctional activity.
- Phillips BA, Okeson J, Paesani D, Gilmore R.

- We conclude that there is an association between obstructive sleep apnea and parafunctional activity, that sleep position affects the incidence of both sleep disordered breathing and parafunctional activity, and that analysis of apneas and hypopneas in both supine and lateral decubitus sleeping positions may be helpful.

Bruxism and Sleep Apnea in Children

Bruxi
(Teeth Grinding



- J Oral Sci. 1999 Sep;41(3):99-103.
- Clinical findings in Japanese children with obstructive sleep apnea syndrome: focus on dental findings.
- Kawashima S, Niikuni N, Lo CH, Kohno M, Nakajima I, Akasaka M.

- Twenty-seven OSA children.
- Apnea index (AI) of 5 or more on polysomnographs.
- Their clinical history was obtained from their mothers, and oral findings were also evaluated. The patient consisted of 15 males (56%) and 12 females (44%).
- Snoring was the most frequently observed finding (100%).
- In terms of dentistry, oral breathing was the most frequently observed finding.

- Med Princ Pract. 2009;18(6):458-65. Epub 2009 Sep 30.
- Habitual snoring in primary school children: prevalence and association with sleep-related disorders and school performance.
- Sahin U, Ozturk O, Ozturk M, Songur N, Bircan A, Akkaya A.

- 1,605 children (819 boys and 786 girls) aged 7-13 years from 9 randomly selected primary schools located within the city limits of Isparta, Turkey.
- The overall prevalence of snoring was 38.9%, while HS accounted for 3.5%. The prevalence of HS among boys (25, 3.0%) was higher than among girls
- Habitual snorers had more daytime and nighttime symptoms. Allergic symptoms, daytime mouth breathing, shaking the child for apnea, restless sleep and hyperactivity were significant and independent risk factors and sleep-related symptoms for HS.
- A significant and independent association was found between poor school performance and hyperactivity, nocturnal enuresis, tooth grinding

- J Bras Pneumol. 2008 Jun;34(6):356-61.
- Symptoms of obstructive sleep apnea-hypopnea syndrome in children
- Gregório PB, Athanazio RA, Bitencourt AG, Neves FB, Terse R, Hora F.

- Evaluated 38 children consecutively referred to the sleep laboratory with suspicion of OSAHS
- Severe cases of apnea were most common among children under the age of six
- In children with OSAHS, the most common symptoms were snoring and nasal obstruction,
- Excessive sleepiness and bruxism were seen in 29.4 and 34.3%,

- All of the children diagnosed with severe OSAHS also presented snoring and bruxism.

- Int J Pediatr Otorhinolaryngol. 2004 Apr;68(4):441-5.
- Improvement of bruxism after T & A surgery.
- DiFrancesco RC, Junqueira PA, Trezza PM, de Faria ME, Frizzarini R, Zerati FE.

- Before surgery all the 69 children presented sleep apnea and 45.6% presented bruxism. Malocclusion could be found in 60.71%. Three months after surgery none of the children presented breathing problems and only 11.8% presented bruxism. There was no difference in malocclusion.

- CONCLUSIONS: This study suggests that there is a positive correlation between sleep-disordered breathing and bruxism. There was an important improvement of bruxism after T & A surgery.

- Int J Pediatr Otorhinolaryngol. 2008 Apr;72(4):509-11. Epub 2008 Feb 20.
- Bruxism and adenotonsillectomy.
- Eftekharian A, Raad N, Gholami-Ghasri N.

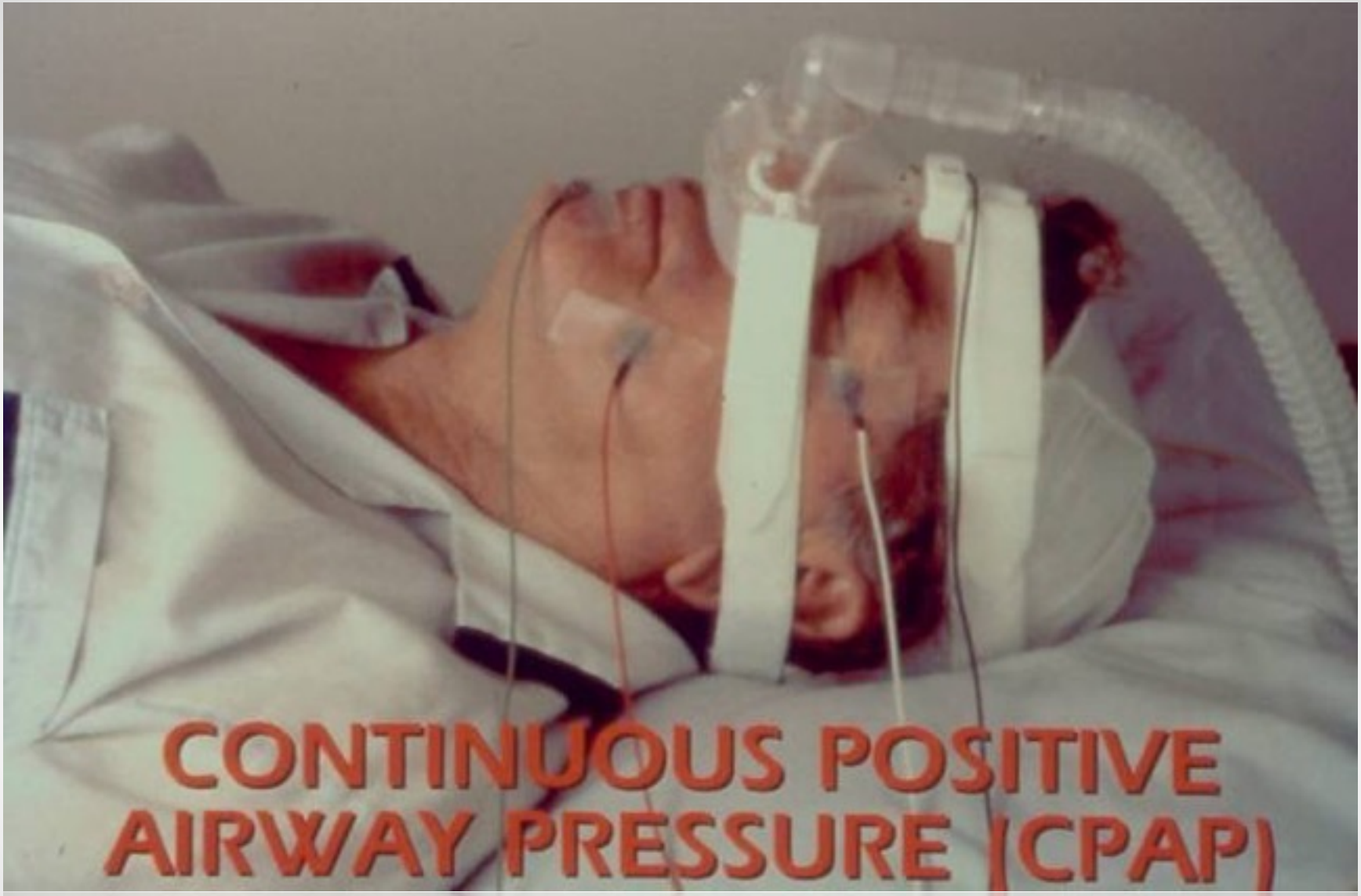
- 140 children aged between 4 and 12 years with obstructive symptoms due to adenotonsillar hypertrophy were evaluated.
- With a questionnaire existence of bruxism was evaluated before and after adenotonsillectomy and the results were compared with each other.
- RESULTS: The prevalence of bruxism was 25.7% before surgery and 7.1% after it.
- CONCLUSION: This study suggests that adenotonsillectomy could improve bruxism significantly in children who have obstructive symptoms due to adenotonsillar hypertrophy.

Nocturnal Bruxism

- Effective Treatment

Nocturnal Bruxism

- Effective Treatment
- CPAP


CONTINUOUS POSITIVE
AIRWAY PRESSURE (CPAP)

- Sleep Med. 2002 Nov;3(6):513-5.
- Sleep bruxism related to obstructive sleep apnea: the effect of continuous positive airway pressure.
- Oksenberg A, Arons E.

- During the CPAP titration night most breathing abnormalities were eliminated and a complete eradication of the tooth grinding events was observed. The results of this study suggest that when sleep bruxism is related to apnea/hypopneas, the successful treatment of these breathing abnormalities may eliminate bruxism during sleep.

The Best Combination Therapy…

+

Nocturnal Bruxism

- Effective Treatment
- Bite Splints (?)


One Size
Fits All
DenTek
Night Guard
Designed by a Dentist Fit By You

Stress Reduction Kit

Bang Head Here

Directions:

1. Place kit on FIRM surface.
2. Follow directions in circle of kit.
3. Repeat step 2 as necessary, or until unconscious.
4. If unconscious, cease stress reduction activity.

Int J Prosthodont. 2004 Jul-Aug;17(4):447-53.

Aggravation of respiratory disturbances by the use of an occlusal splint in apneic patients: a pilot study.

Gagnon Y, Mayer P, Morisson F, Rompré PH, Lavigne GJ.

Faculty of Dental Medicine, University of Montreal, Canada.

- RESULTS: No statistically significant difference in AHI was noted between baseline and splint nights.

- However, four patients experienced an aggravation in apnea diagnosis category on the night they used the splint. The AHI was increased by more than 50% in 5 of the 10 patients. The RDI showed a 30% increase from baseline to splint nights. The percentage of sleeping time with snoring also increased by 40% with the splint.

Int J Prosthodont. 2004 Jul-Aug;17(4):447-53.

Aggravation of respiratory disturbances by the use of an occlusal splint in apneic patients: a pilot study.

Gagnon Y, Mayer P, Morisson F, Rompré PH, Lavigne GJ.

Faculty of Dental Medicine, University of Montreal, Canada.

- CONCLUSION: This open study suggested that the use of an occlusal splint is associated with a risk of aggravation of respiratory disturbances. It may therefore be relevant for clinicians to question patients about snoring and sleep apnea when recommending an occlusal splint.

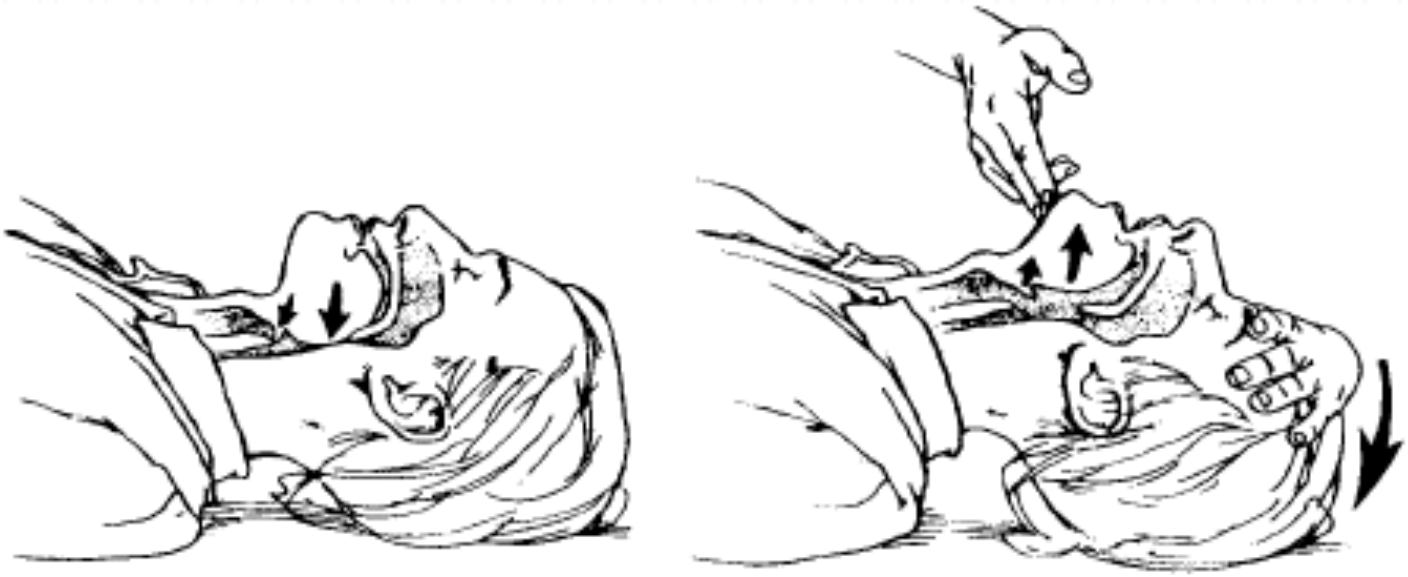
Nocturnal Bruxism

- Effective Treatment
- Mandibular Advancement

CPAP and OA Treatment

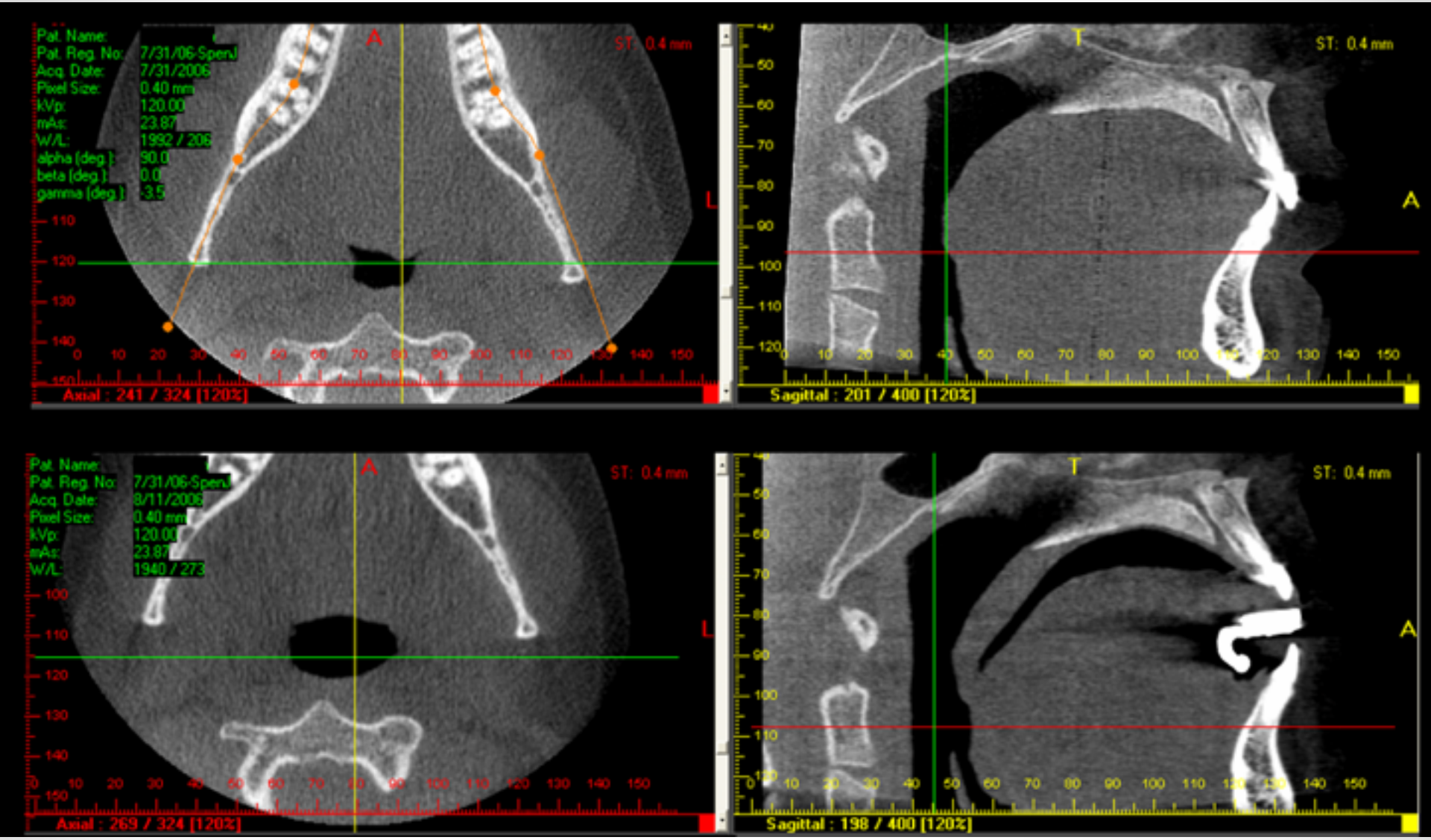
CPAP Treatment

OA Treatment



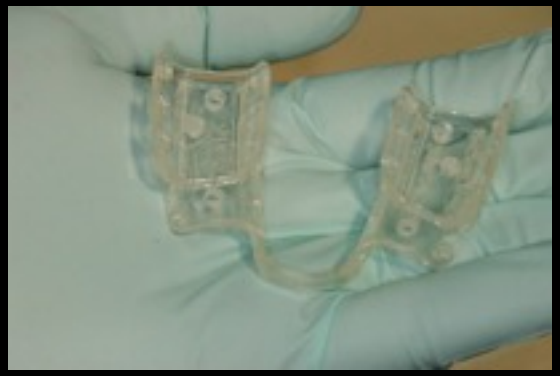
SOURCE: Copyright. **American Heart Association**. *Instructor's Manual for Basic Life Support.* Dallas: American Heart Association, 1987.

★ ***Figure 2-5. Head-tilt/chin-lift technique of opening airway.***



Cone Beam CT shows [illegible] with TAP II in place

SnoreByte

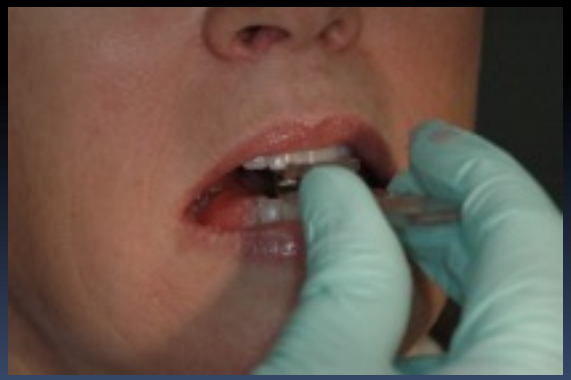


The Prefabricated Tray

Filling the Tray with Lining Material

Filling the Tray, Continued

The Lined Tray in the Mouth



Using the Silent Sleep "Bite Gauge" to establish the mandibular position

The Finished Silent Sleep Oral Appliance

- Int J Prosthodont. 2009 May-Jun;22(3):251-9.
- Effect of an adjustable mandibular advancement appliance on sleep bruxism: a crossover sleep laboratory study.
- Landry-Schönbeck A, de Grandmont P, Rompré PH, Lavigne GJ.

- Twelve subjects
- 5 nights in a sleep laboratory. After habituation and baseline nights, 3 more nights were spent with an MAA in either a slight (25%) or pronounced (75%) mandibular protrusion position or with an MOS (control).

- CONCLUSION: Short-term use of an MAA is associated with a significant reduction in SB motor activity without any appliance breakage. A reinforced MAA design may be an alternative for patients with concomitant tooth grinding and snoring or apnea during sleep.

- Int J Prosthodont. 2006 Nov-Dec;19(6):549-56.
- **Reduction of sleep bruxism using a mandibular advancement device: an experimental controlled study.**
- Landry ML, Rompré PH, Manzini C, Guitard F, de Grandmont P, Lavigne GJ.

- Thirteen intense and frequent bruxors
- The MOS was used as the active control condition and the MAD was used as the experimental treatment condition.
- Designed to temporarily manage snoring and sleep apnea, the MAD was used in 3 different configurations.

- CONCLUSIONS: Short-term use of a temporary custom-fit MAD is associated with a remarkable reduction in sleep bruxism motor activity.

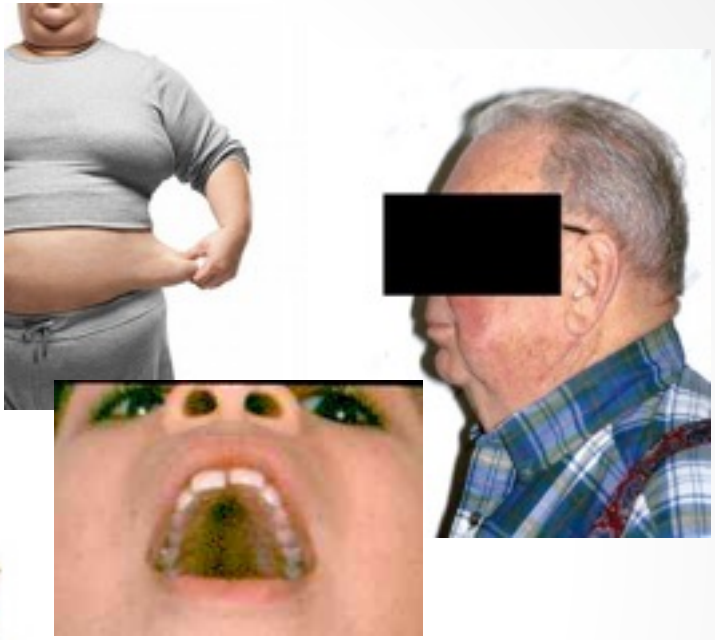
Screening Your Patients

Sleep Apnea Risk Factors

- Obesity
- Increasing Age
- Male Gender
- Anatomic Abnormalities of Upper Airway
- Family History
- Alcohol or Sedative Usage
- Smoking
- Hypertension

OSA Risk Factors

- BMI>30
- Neck circumference >17in
- High arched palate
- Micro/retrognathia
- Mallampati class III / IV airway



THE Laryngoscope™
FOUNDED IN 1896
The Triological Society

Results: **The majority of the Far-East Asian men were found to be nonobese (mean BMI, 26.7 +/- 3.8) but had severe OSAS** (mean RDI, 55.1 +/- 35.1). When controlled for age, RDI, and LSAT, the white men were substantially more obese (mean BMI, 29.7 +/- 5.8, P = .0055). When controlled for age and BMI, the white men had less severe illness (RDI, 34.1 +/- 17.9, P = .0001). Although the posterior airway space and the distance from the mandibular plane to hyoid bone were less abnormal in the Far-East Asian men, the cranial base dimensions were significantly decreased.

October 2000

- Obstructive sleep apnea in non-obese patients: age, gender and severity
- Teimur Yeligulashvili, PhD
- Abstract presented at SLEEP 2009

- Results confirmed that OSA in non-obese patients is most prevalent in middle-aged men with larger neck sizes. **Fifty-four percent (2,906) of 5,426 non-obese patients were OSA positive**, and most of them were middle age (57 percent). An equal number of patients had mild OSA (50.4%) or moderate to severe OSA (49.6%). Male prevalence and neck size were significantly higher in the group with moderate to severe OSA.

- Sleep apnoea is a common occurrence in females
- Karl A. Franklin et. al.
- European Respiratory Journal, August 2012

- We investigated 400 females from a population-based random sample of 10,000 females aged 20–70 years. They answered a questionnaire and performed overnight polysomnography.

- Sleep apnoea is a common occurrence in females
- Karl A. Franklin et. al.
- European Respiratory Journal, August 2012

- **Obstructive sleep apnoea (apnoea-hypopnoea index ≥ 5) was found in 50% (95% CI 45–55%) of females aged 20–70 years**. Sleep apnoea was related to age, obesity and hypertension but not to daytime sleepiness. Severe sleep apnoea (apnoea-hypopnoea index ≥ 30) was scored in 14% (95% CI 8.1–21%) of females aged 55–70 years and in 31% (95% CI 12–50%) of obese females with a body-mass index of >30 kg·m^{-2} aged 50–70 years.

Craniofacial Pain Center of Idaho

TMJ Disorders
Head & Facial Pain
Sleep Apnea & Snoring

Jamison R. Spencer, DMD, MS
Cameron R. Kuehne, DMD

Sleep Screening Questionnaires

Please answer the questions below to help us assess for possible sleep apnea, a condition in which your breathing pauses or stops for periods of time while you sleep. Sleep apnea can increase your risk for many health conditions. It can also increase your risk for breathing problems after surgery.

Name _____ Date _____

DOB _____ Height _____ Weight _____

	Yes	No
Have you ever been diagnosed with obstructive sleep apnea (OSA)?	☐	☐
Are you currently being treated for OSA?	☐	☐
Are you aware of a family history of OSA?	☐	☐
Are you aware of clenching or grinding your teeth at night?	☐	☐

ESS: Epworth Sleepiness Scale

How likely are you to doze off or fall asleep in the following situations, in contrast to just feeling tired?

0 = I would never doze
1 = I have a slight chance of dozing
2 = I have a moderate chance of dozing
3 = I have a high chance of dozing

Situation	Chance of Dozing
1. Sitting and reading	_____
2. Watching TV	_____
3. Sitting inactive in a public place (e.g. a theatre or a meeting)	_____
4. As a passenger in a car for an hour without a break	_____
5. Lying down to rest in the afternoon when circumstances permit	_____
6. Sitting and talking to someone	_____
7. Sitting quietly in a lunch without alcohol	_____
8. In a car while stopped for a few minutes in traffic	_____

STOP - BANG

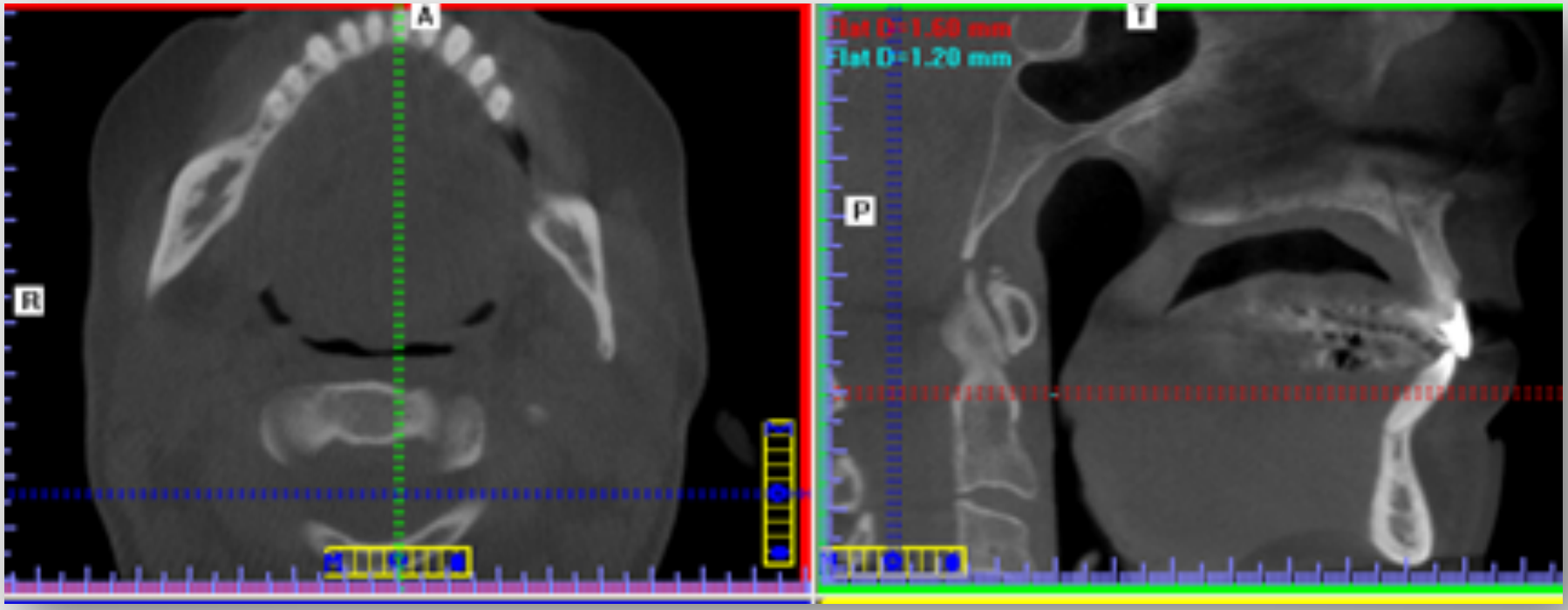
			Yes	No
1.	**S**nore	Do you snore loudly? (Louder than talking or loud enough to be heard behind a closed door?	☐	☐
2.	**T**ired	Do you often feel tired, fatigued or sleepy during daytime?	☐	☐
3.	**O**bstruction	Has anyone observed you stop breathing during your sleep?	☐	☐
4.	**P**ressure	Do you have or are you being treated for high blood pressure?	☐	☐
5.	**B**MI	Is your body mass index greater than 28?	☐	☐
6.	**A**ge	Are you 50 years old or older?	☐	☐
7.	**N**eck	Are you a male with a neck circumference greater than 17 inches, or a female with a neck circumference greater than 16 inches?	☐	☐
8.	**G**ender	Are you a male?	☐	☐

Questionnaires adapted from www.EpworthSleepinessScale.com and Chung F, et. al Anesthesiology 2008; 108(5):812-821.

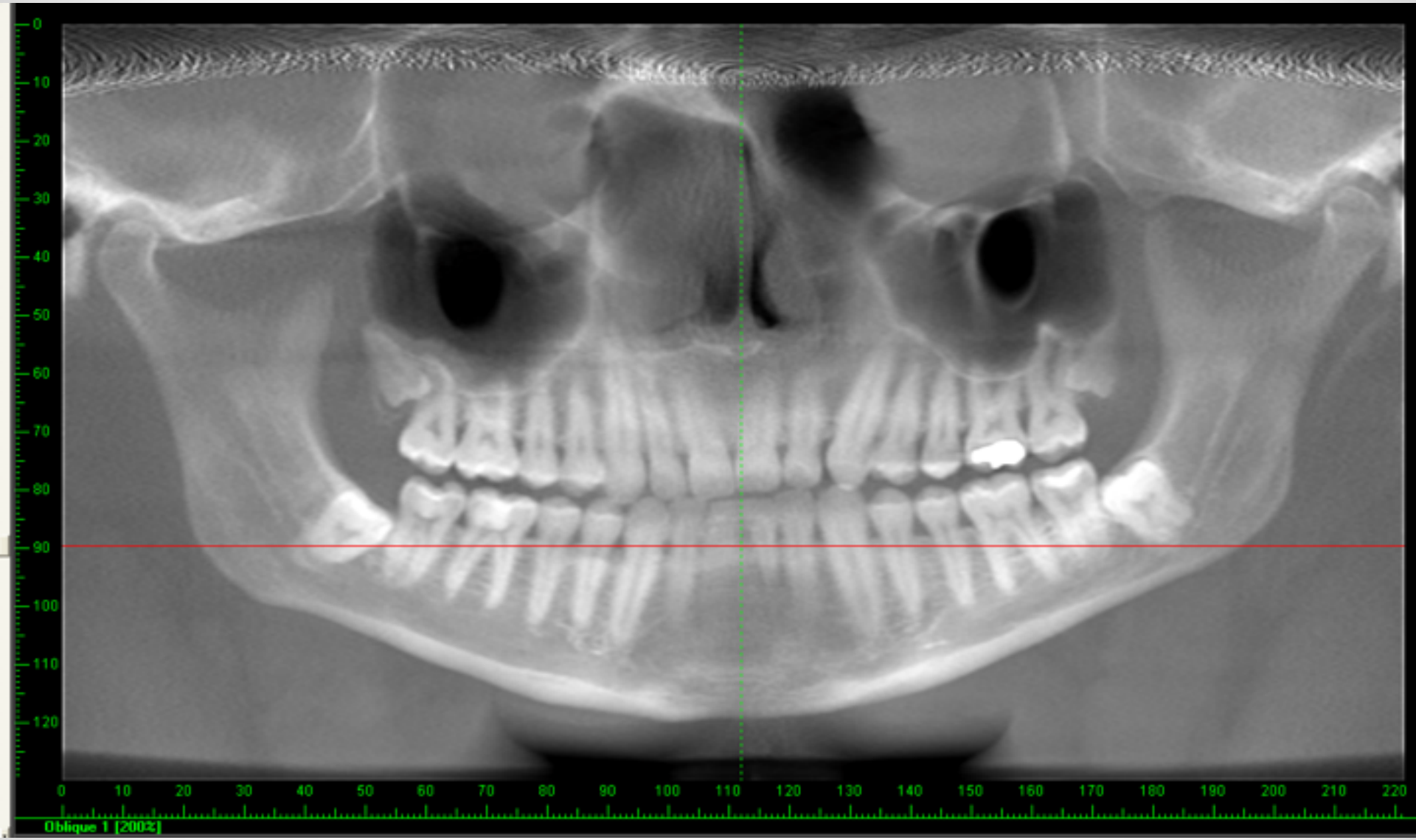
8119 Ustick Rd. Boise, ID 83704 • (208) 376-3600 • Fax (208) 376-3616 • www.cpcidaho.com • www.sleepidaho.com


Worn teeth due to grinding (Bruxism)

1.2 mm Airway!!!




mm/inch
OFF
ON
ZERO


0
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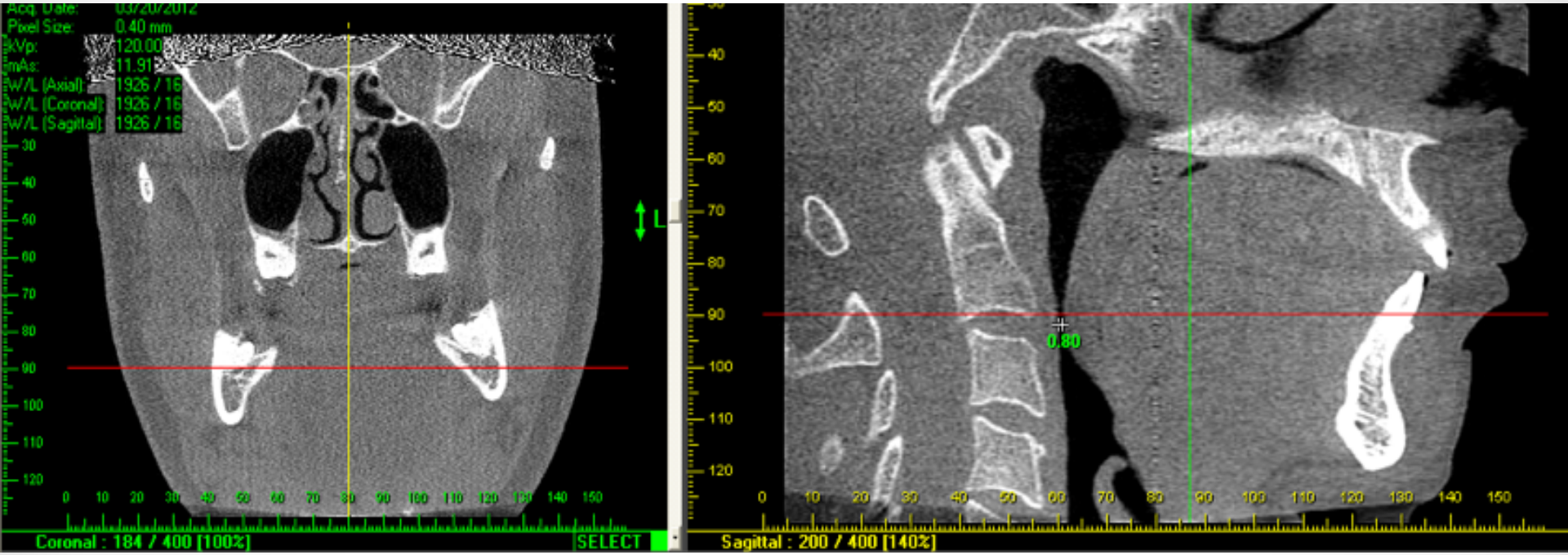
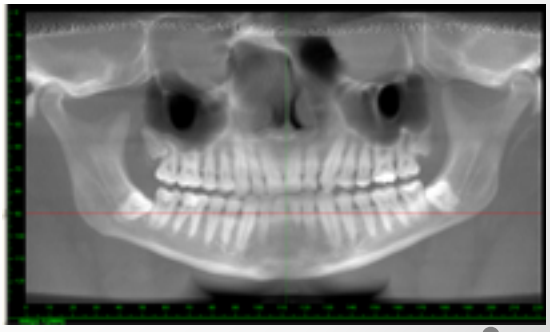
Oblique 1 [2002]

0.8 mm Airway!!!



With Teeth Apart!!!



Case Studies

Nacho

- Male
- 42 years old
- Chief Complaint: Tired, lack of energy
- Doctor asks, “Do you snore?”
- Patient says, “Yes.”

- Refer for Sleep Study

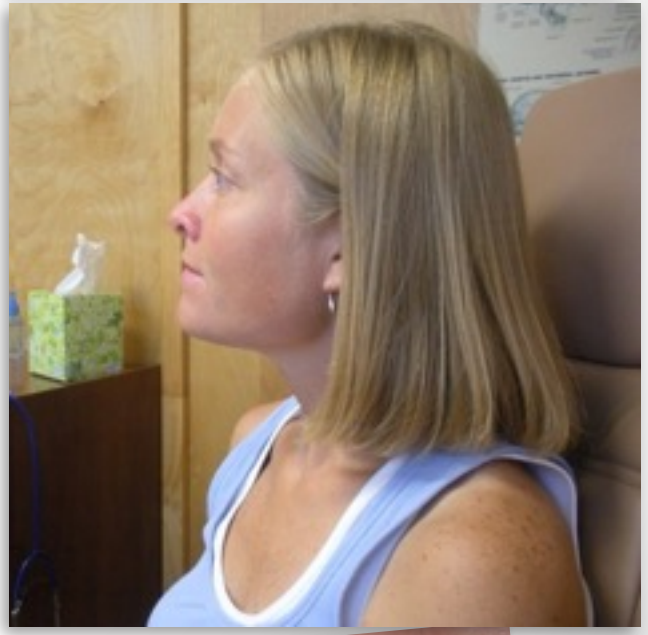
Jennifer

- Female
- 45 years old
- Chief Complaint: “Tired, lack of energy”
- Doctor asks, “Are you having trouble sleeping?”
- Patient says, “Yes.”

Becky

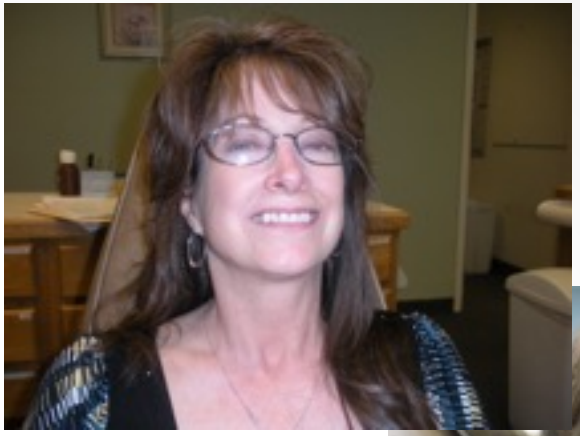
- 35yo,
- 5’5”, 125 lbs, BMI 20.8,
- Healthy
- square jawed
- large tori
- snoring
- anterior wear (bonding which she broke off)
- “jaw has always popped,”
- NG for 4 years
- Referred to me by dentist for chief complaints of temporal headaches, bilateral jaw pain
- Patient thought her pain might have been brought on by stress since her husband went to China and she has 3 small boys.

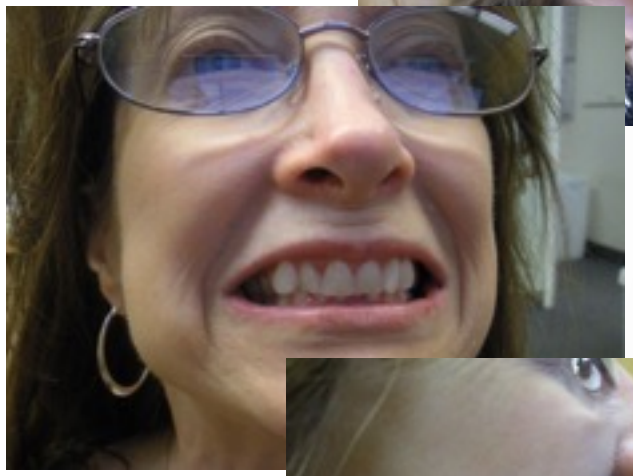
AHI = 24

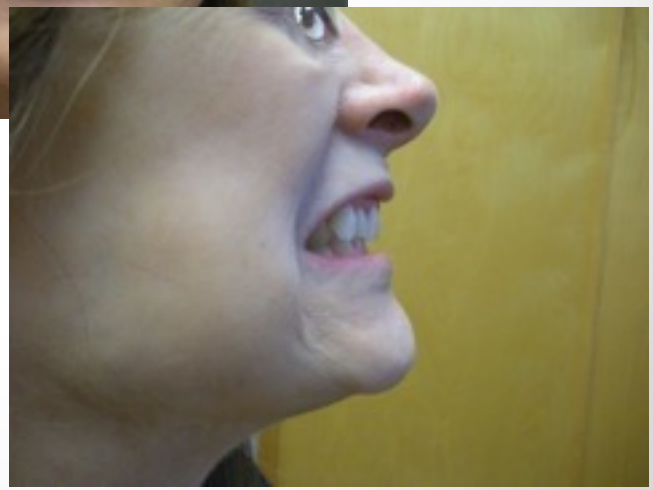


Linda

- 54yo woman
- 5’ 2”, 122lbs, BMI 22.3,
- AHI 11, supine AHI 21, REM AHI 36
- Chief complaints of extreme facial pain, jaw clicking, jaw pain, ear pain (2007 sleep study—CPAP intolerant, history of chronic TMD and facial pain among other problems, treated with anti-depressants)







Proper diagnosis is the key to proper treatment.

THE Doctors

Botox for TMJ?


THE Drs


THE Drs
Suzanne
SUFFERING FROM TMJ


I BEAT
ANOREXIA
E THE IRISH

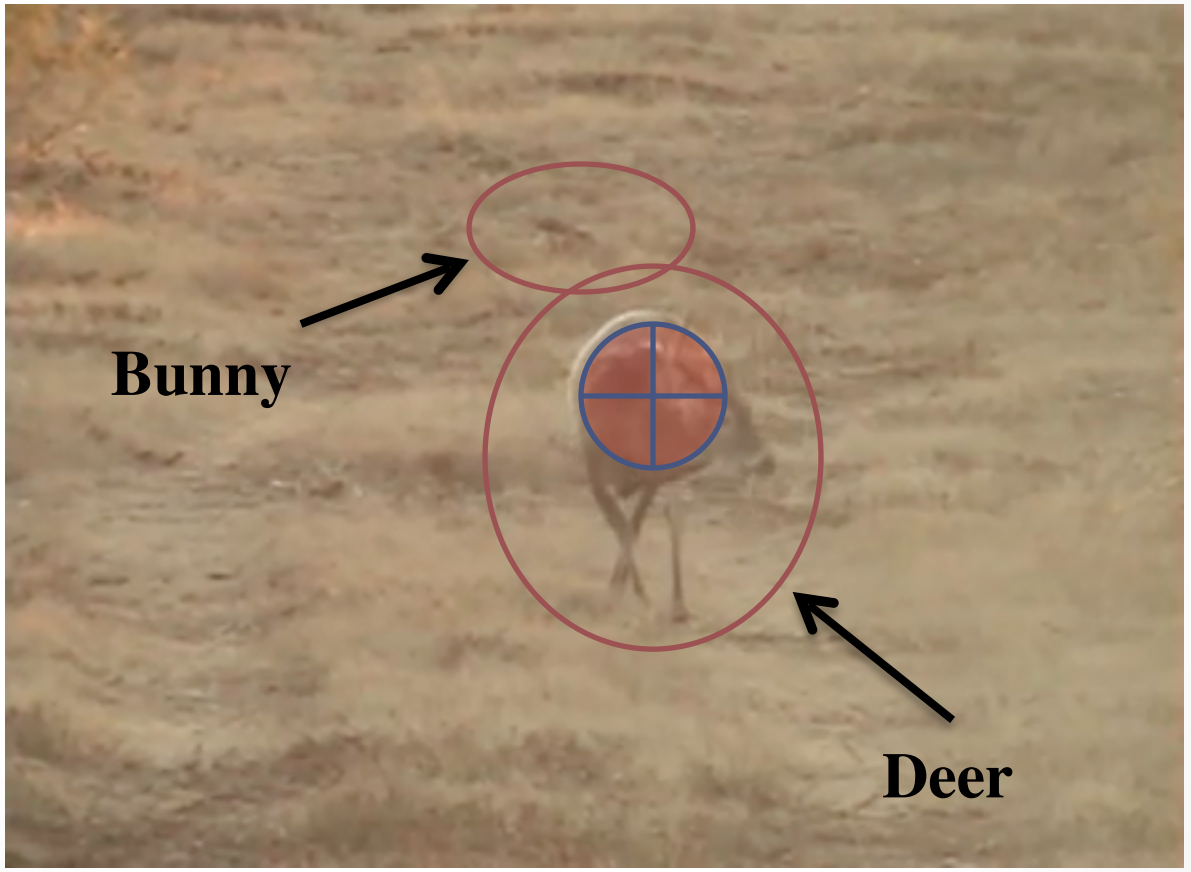
Where to start?

Innocent Bystanders?

Please Look Away If You Are Sensitive

Innocent Bystanders? (or

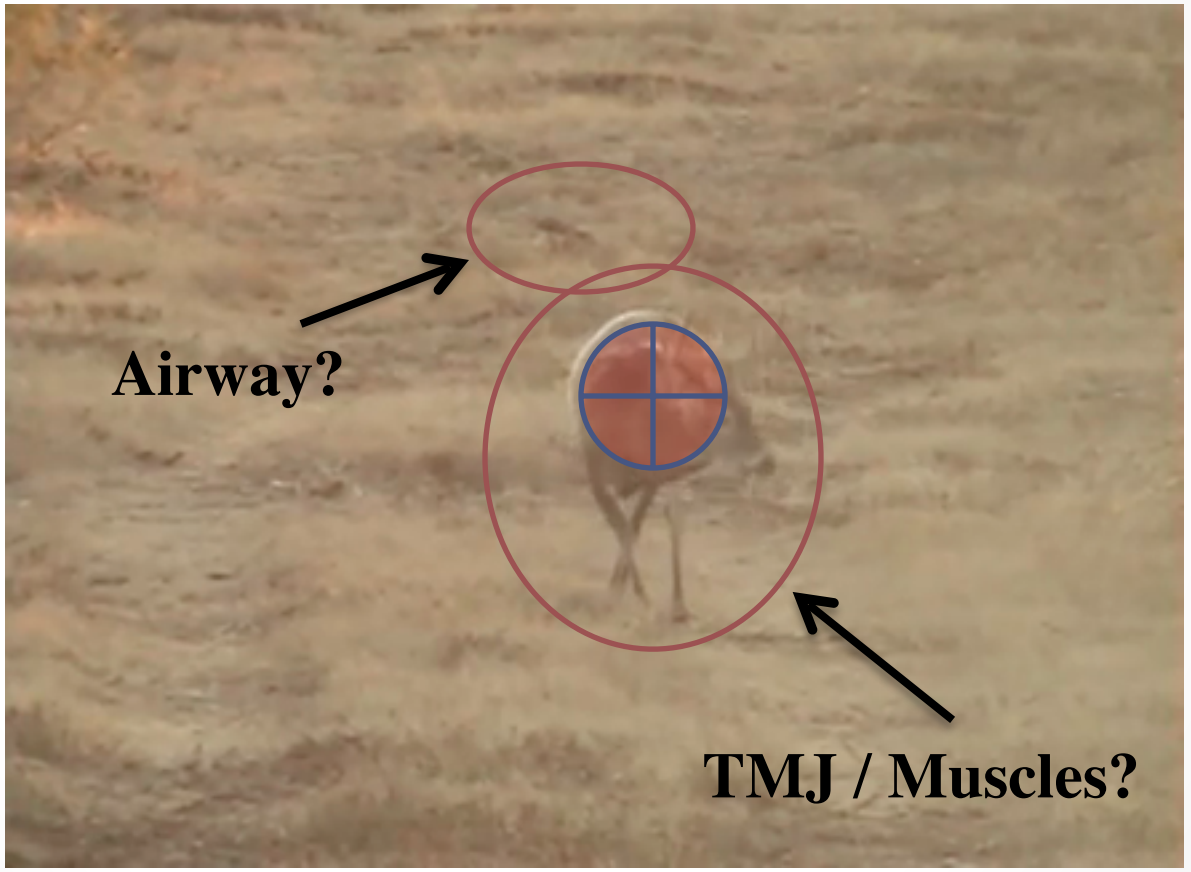
what you focus on isn't always what you hit)



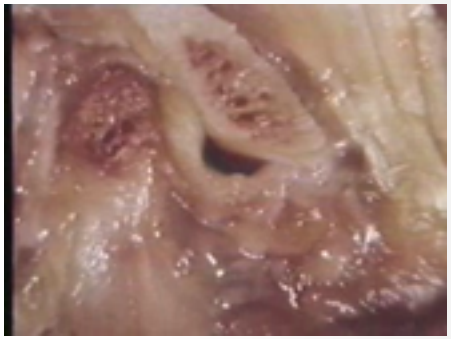
Please Look Away If You Are Sensitive

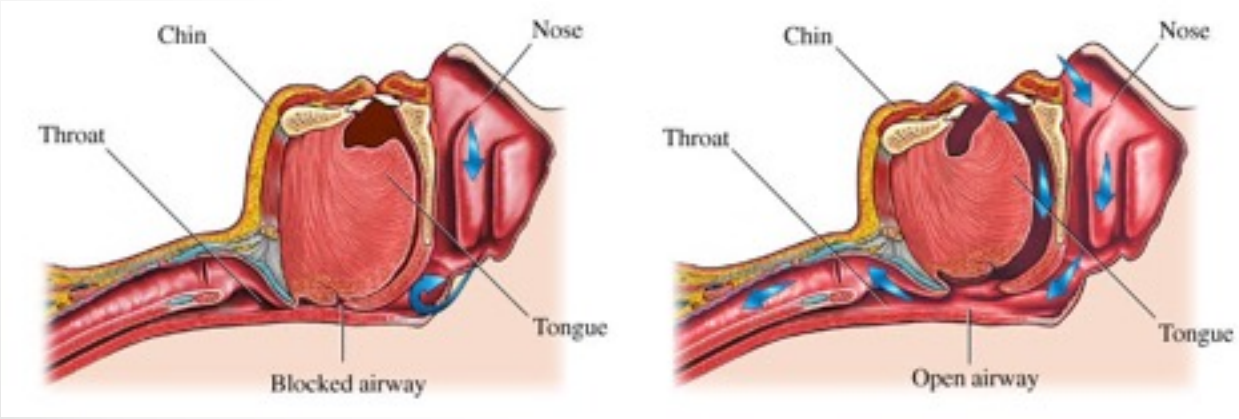
Innocent Bystanders? (or

what you focus on isn't always what you hit)

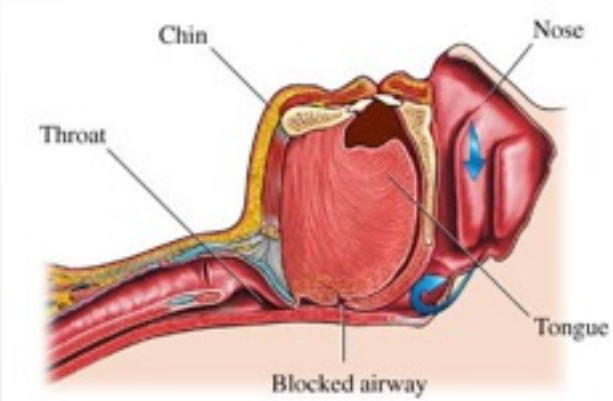


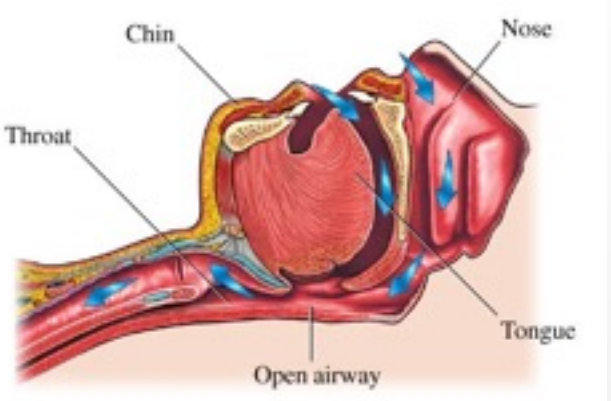
Innocent Bystanders? (or what you focus on isn't always what you hit)





Accidental Sleep Doctors?





Accidental Sleep Doctors?

Accidental
for good
or for bad?

Acci…Dental

In Conclusion

- Sleep apnea is not only in fat, old, men
- Wear patterns on the teeth may be an indication of OSA related bruxism
- If a patient suffers with OSA related bruxism, treatment of the OSA may reduce or eliminate the bruxism
- Use of an oral appliance in such cases may not only treat the OSA but also protect the teeth from further wear and breakdown
- When OSA related bruxism is the true etiology of a TMJ disorder, treating the OSA may result in reduction or elimination of the TMJ disorder
- **You have hundreds of patients (adults and children) in your practice that you can help!!!**

“All you need is love”

- The Beatles

“All I need is the air that I breathe, and to love you”

Parafunction…
or Artistic Freedom

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- The Hollies