Bruxism

Learning Outcomes: Describe evolution, epidemiology, risk factors, aetiology and pathophysiology, clinical features, diagnosis and management of bruxism.

Dr Amanda Phoon Nguyen

BDSc (UniMelb), MRACDS (GDP), DClinDent (Oral Med) (UWA), MRACDS (OralMed), Cert ADL, FOMAA, FPFA, FICD,FADI, MAICD, GCHL, MICDA, FDSM

Oral Medicine Specialist

Who is the Bruxer?

60 year old male

Dentist noted excessive tooth wear and tongue scalloping

No pain

26 year old male

Snoring and sleep disordered breathing

Indications: Assessment for OSA ESS: 7/24 Stop-Bang: 4/8

Anthropometrics and BP

Height (cm)	177.0	BMI (kg/m2)	22.3	Waist/Hip Ratio	0.87	Night BP mm	120/55
Weight (kg)	70.0	Neck (cm)	37	Malampatti class		Morn BP mm	113/53

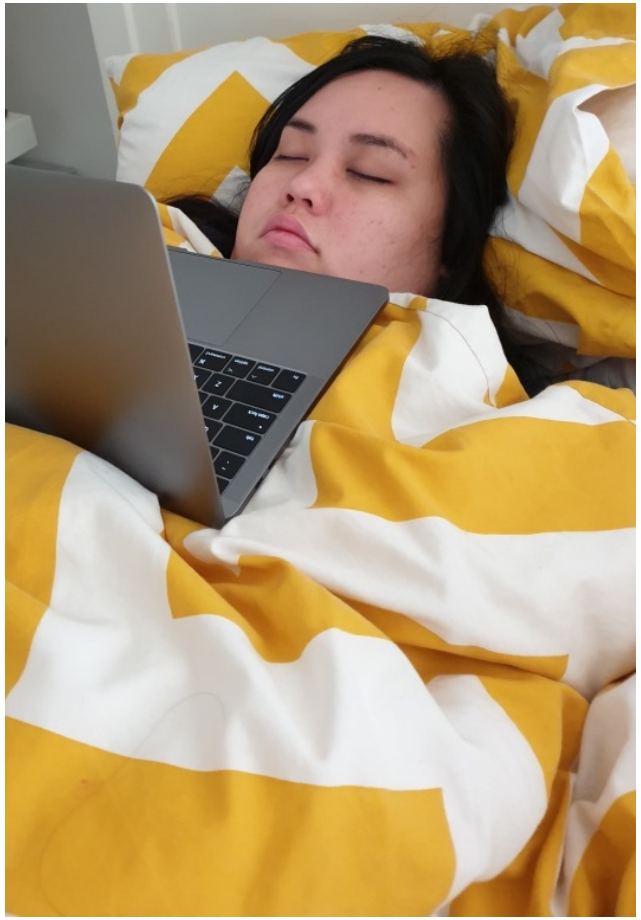
Sleep Data

Time in Bed (min/hrs)	427.7	7.13	REM Latency (min)	220.0	REM (N = 20-30%)	25.2%	71.5 min
Sleep Time (min/hrs)	283.9	4.73	WASO (min)	121.0	Stage N1 (N ~ 5%)	4.1 %	11.5 min
Sleep Efficiency %	66.4		Alpha Intrusion	-	Stage N2 (N ~ 50%)	57.9 %	164.4
Sleep Latency (min/hrs)	22.8	0.38			Stage N3 (N ~ 20%)	12.9 %	36.5 min

Respiratory Events	**Units**	**Awake**	**REM**	**NREM**	**All Sleep**
Sleep Disordered Breathing Severity					Moderate
Apnoea/Hypopnoea Index AHI (RDI)	#/hr		26.9 (27.7)	27.1 (28.5)	27.1 (28.3)
Supine AHI (RDI)	#/hr		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Non-Supine AHI (RDI)	#/hr				27.05 (28.32)
Time in Apnoeas/Hypopnoeas	min				87.0
Longest Apnoea/Hypopnoea	sec/sec				50.5 / 116.0
Central/Mixed Apnoea Index	#hr/#hr				0.2 / 0.0
Average/Minimum SpO2 Saturation	%/%	97	96	96	96 / 84
ODI (≥3% drop)/Time SpO2 < 85%	#/hr/min				11.4 / 0.1
Snoring – loudness/peak dB	grade/dB				++ / 59
Total duration with snoring	min				114.5
Sleep Disturbance	**Units**	**Awake**	**REM**	**NREM**	**Total Sleep**
Arousal Index	#/hr		31.0	35.0	34.0
Total number of Arousals	#		37	124	161
Respiratory/Leg Arousal Index	#hr/#hr		24.3 / 2.5	23.4 / 0.8	24.9 / 1.3
Arousals with Bruxism	# (grade)				0 (-)
Awakenings	#		3	14	17
Respiratory Awakenings	#		2	11	13
Limb Movements	**Units**	**Awake**	**REM**	**NREM**	**Total Sleep**
Limb movement index	#/hr	-			1.9
Total number of movements	#				13
PLM index	#/hr				0.9

Night Sedation: Nil **Alcohol:** Nil

Who is the Bruxer?



No tooth wear

No sleep disordered breathing, snoring or OSA

Some daytime tiredness

Masseter and temporalis hypertrophy

No jaw clicking or deviation, locking or pain.

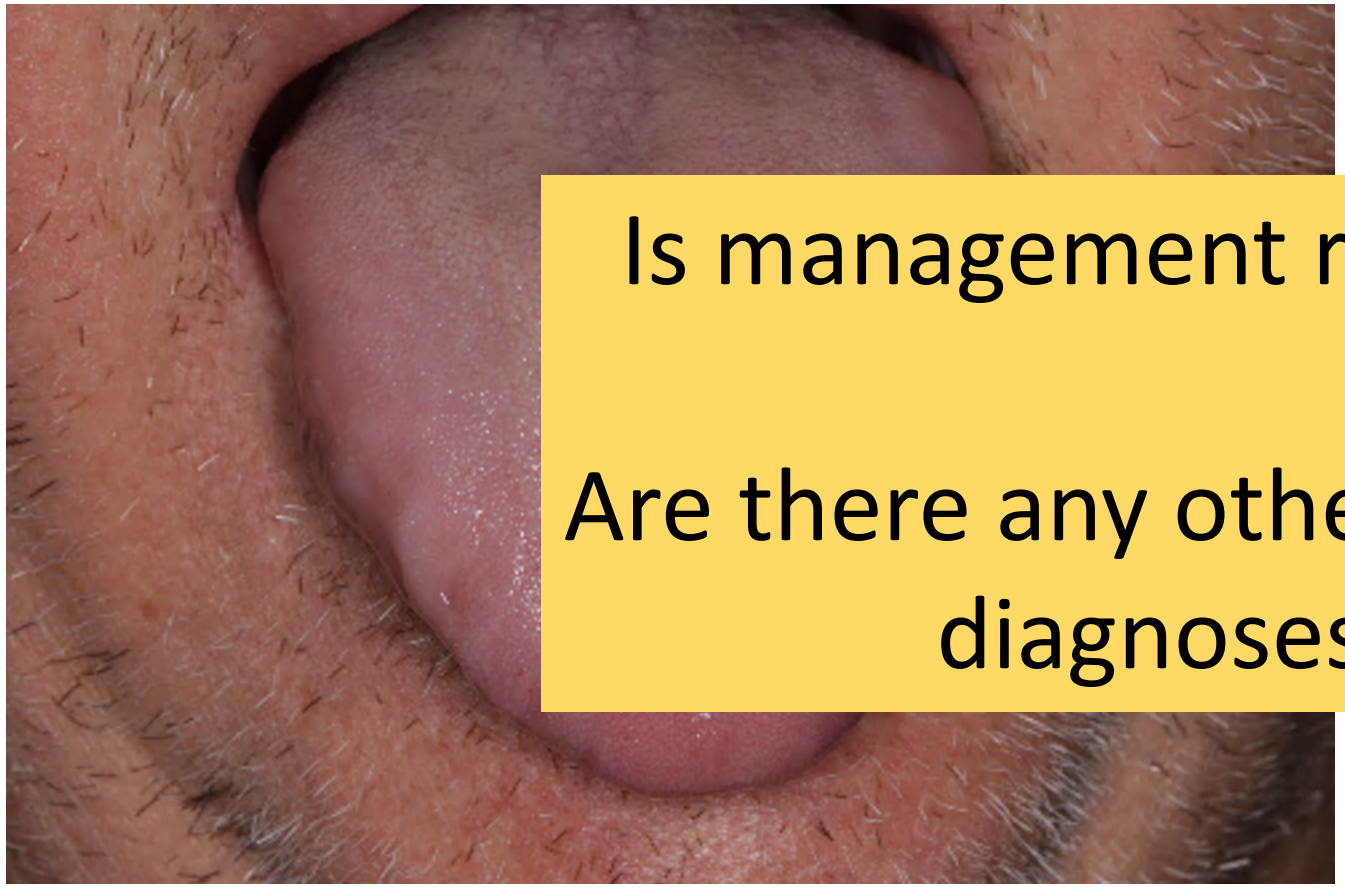
Occasional tenderness to palpation of muscles of mastication

Who is the Bruxer?

Patient presents with a toothache.

Tonsillar hypertrophy noted on clinical examination

Who is the Bruxer?



60 year old male

Is management required?

Are there any other possible diagnoses?

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ooth wear

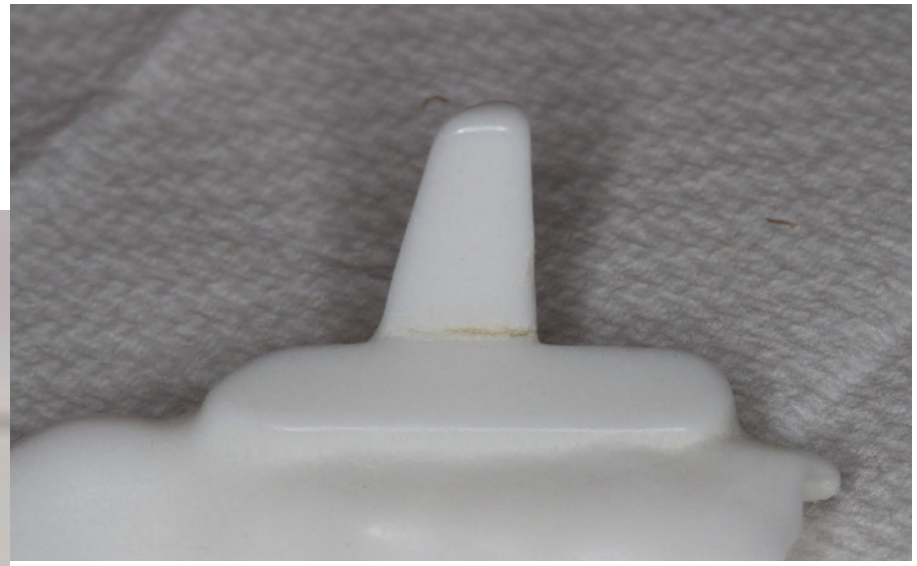
e

No pain

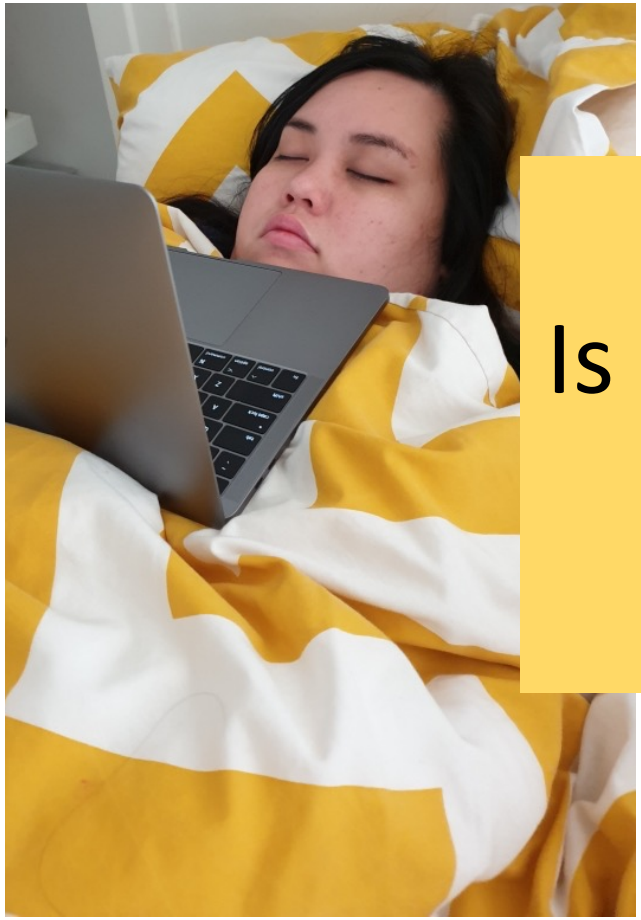
26 year old male

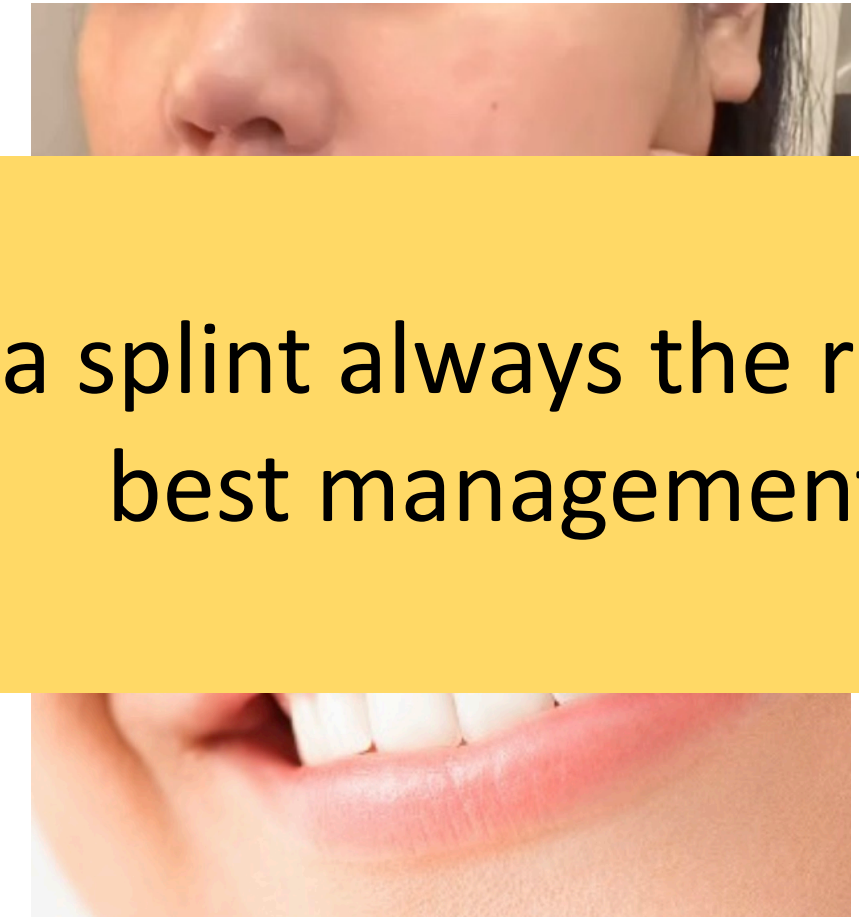
Snoring and sleep disordered breathing

Does bruxism affect our management or treatment plan?



Who is the Bruxer?





Is a splint always the right or best management?

No tooth wear

No sleep disordered breathing, OSA

ime tiredness

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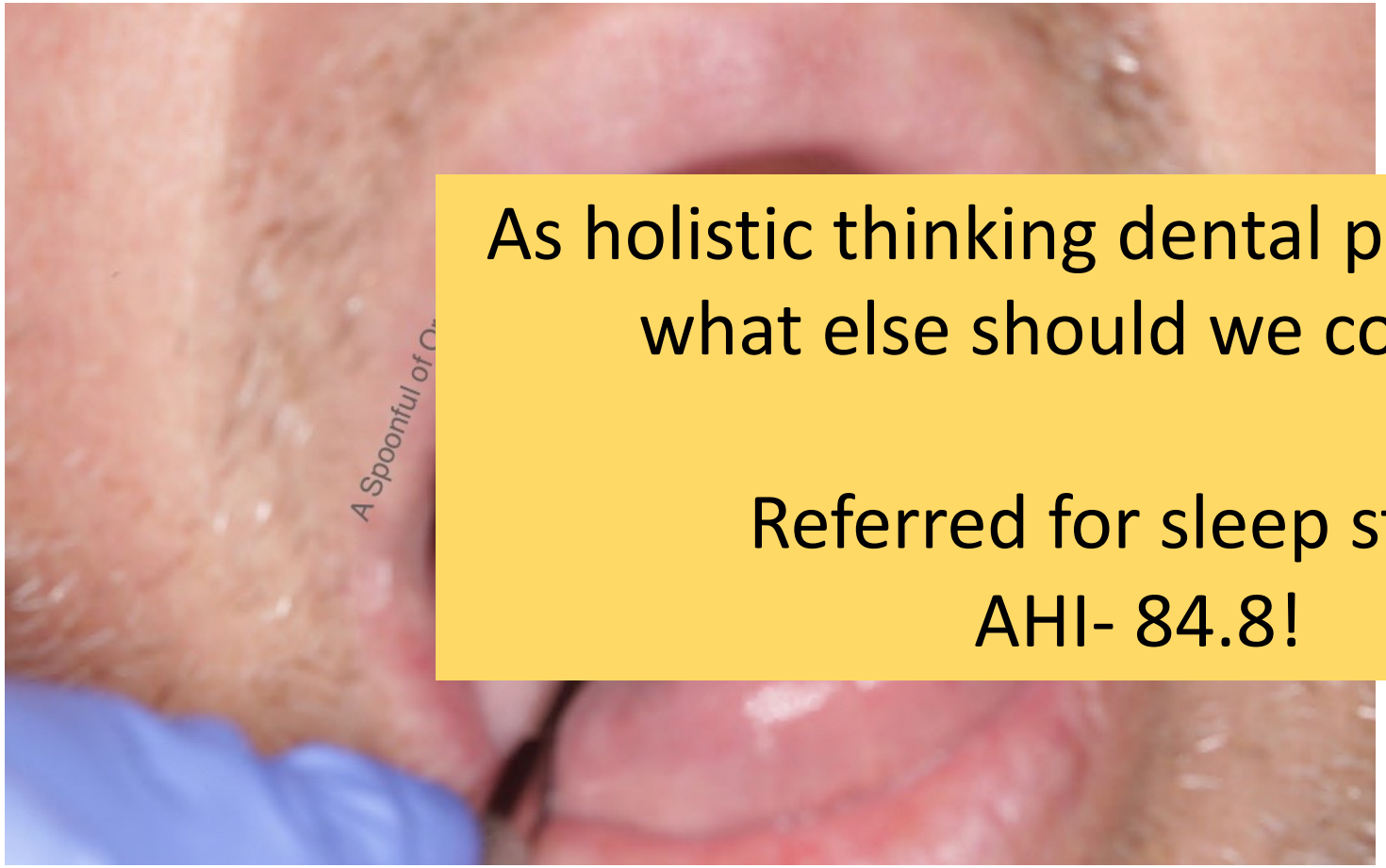
y

king or deviation,
pain.

Occasional tenderness to palpation of muscles of mastication

Who is the Bruxer?



As holistic thinking dental professionals, what else should we consider?

Referred for sleep study
AHI- 84.8!

Patient presents
hache.
y
linical
examination

Definitions

Sleep bruxism is a masticatory muscle activity during sleep that is characterised as rhythmic (phasic) or non-rhythmic (tonic) and is not a movement disorder or a sleep disorder in otherwise healthy individuals.

Awake bruxism is a masticatory muscle activity during wakefulness that is characterised by repetitive or sustained tooth contact and/or by bracing or thrusting of the mandible and is not a movement disorder in otherwise healthy individuals.

Lobbezoo F, Ahlberg J, Raphael KG, Wetselaar P, Glaros AG, Kato T, Santiago V, Winocur E, De Laat A, De Leeuw R, Koyano K, Lavigne GJ, Svensson P, Manfredini D. International consensus on the assessment of bruxism: Report of a work in progress. J Oral Rehabil. 2018 Nov;45(11):837-844. doi: 10.1111/joor.12663. Epub 2018 Jun 21. PMID: 29926505; PMCID: PMC6287494.

Bruxism in Adults

Commonly noted by dental professional because of:
Clinical signs and Symptoms, Patient self-report

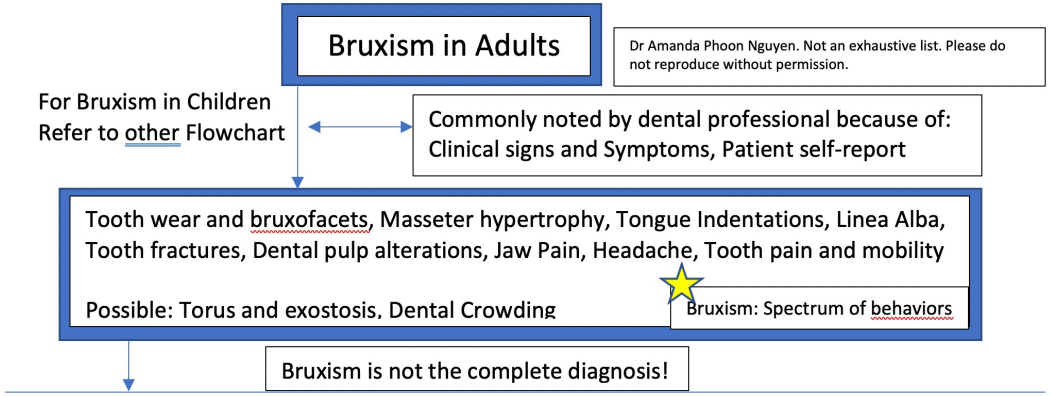
Tooth wear and bruxofacets, Masseter hypertrophy, Tongue Indentations, Linea Alba, Tooth fractures, Dental pulp alterations, Jaw Pain, Headache, Tooth pain and mobility

Possible: Torus and exostosis, Dental Crowding

Bruxism: Spectrum of behaviors

Bruxism is not the complete diagnosis!

Signs of Bruxism



- Toothwear and Bruxofacets
  - Not caused exclusively by bruxism
  - Erosion is usually the main cause
  - Not reliable as a single diagnostic indicator

-Remember spectrum of bruxism and definition

- Tongue Scalloping
  - Causes of macroglossia
  - More common in population than % of bruxers
  - Not reliable as a single diagnostic indicator

Signs of Bruxism Contd

- Masseter hypertrophy- usually asymptomatic, may be unilateral or bilateral
  - Masticatory muscle hyperactivity cannot be verified in all instances of masseter hypertrophy
- Linea alba
  - Thought to be associated most with clenching. Common clinical finding, specificity not known
- Tooth fractures- common! Nocturnal bite force may exceed maximum amplitude in the day time.

Bruxism is not the complete diagnosis!

Is it Bruxism?

Consider differential diagnoses

What type of bruxism is prevalent?
Awake/Sleep Bruxism (AB/SB)

Consider the definition of bruxism and classify (not mutually exclusive).

1. Not a risk or protective behaviour; is a harmless behaviour
2. Risk factor: associated with 1 or more negative health outcomes
3. Protective factor: associated with 1 or more positive health outcomes

AB or SB

Primary or Secondary?

I need to know this!

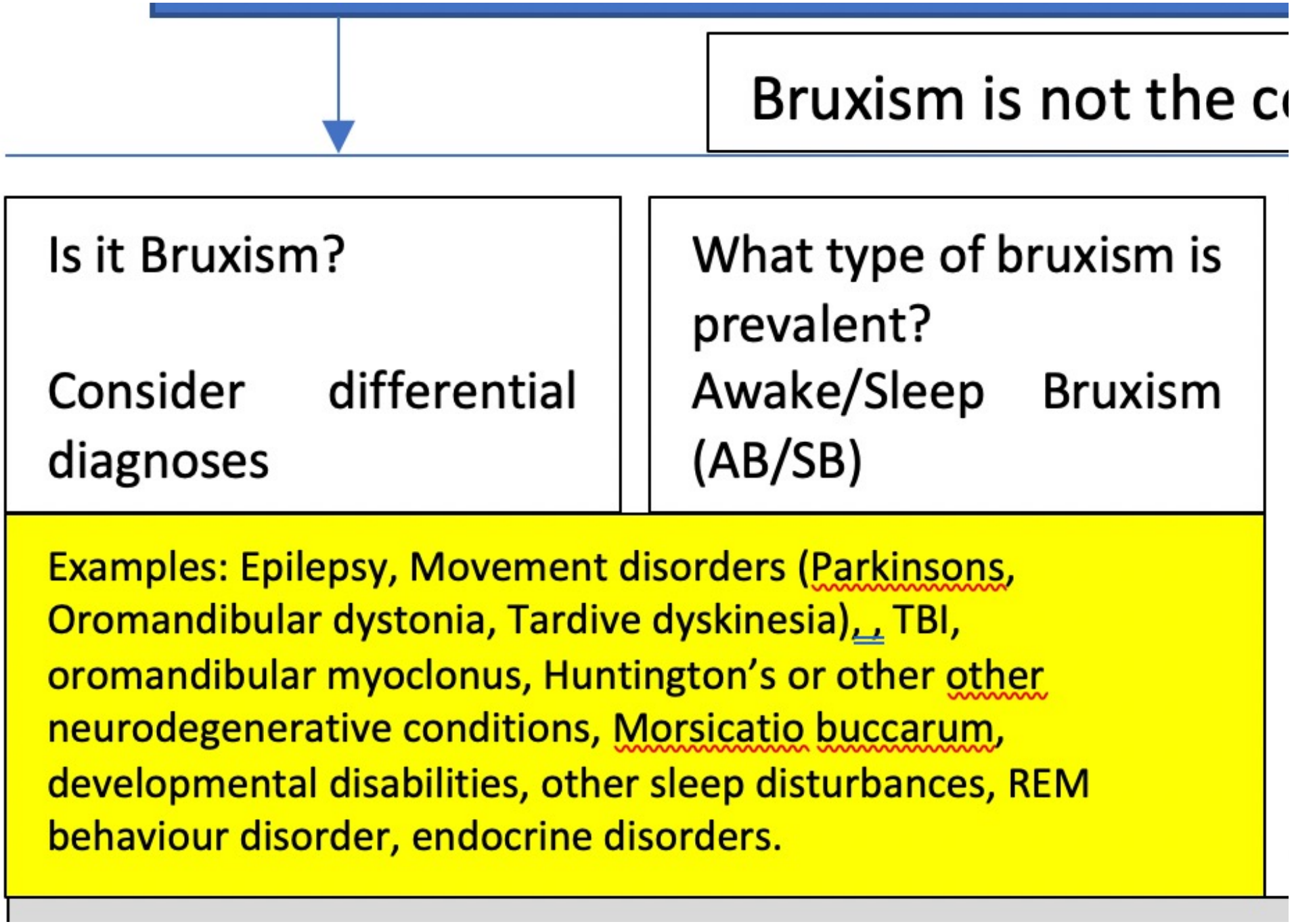
Examples: Epilepsy, Movement disorders (Parkinsons, Oromandibular dystonia, Tardive dyskinesia), , TBI, oromandibular myoclonus, Huntington's or other other neurodegenerative conditions, Morsicatio buccarum, developmental disabilities, other sleep disturbances, REM behaviour disorder, endocrine disorders.

Some Relevant Medical History

Medications, Alcohol, Cigarette smoking, Caffeine, Recreational drug use, Sleep disordered breathing, Gastroesophageal reflux, Sleep related movement and other sleep disorders, Psychosocial factors and Psychiatric disorders.

Consider investigations targeted towards the medical history or differential diagnosis, or referral if indicated.

→ Sleep: OSA 50, STOP BANG, Epworth Sleepiness Score


Bruxism is not the c
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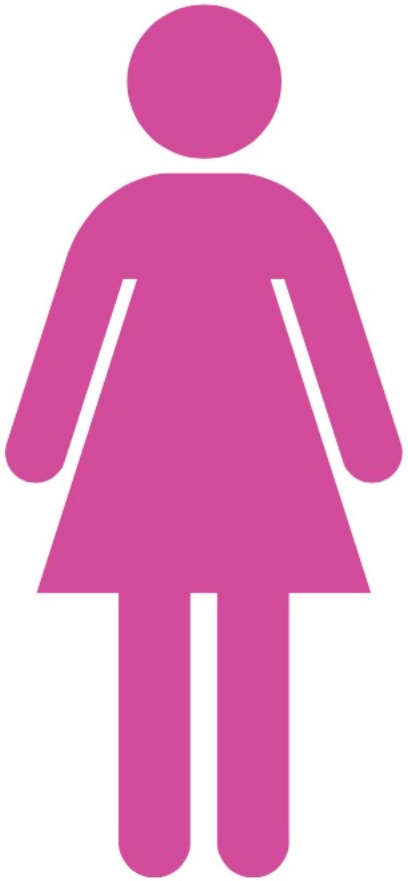
55 year old female



- Referred from GP
- Presenting problem as per GP letter 7/10/16
  - “Fronto-temporal dementia with difficulty cooperating with dental procedure or treatment”
  - Can walk but cannot speak or follow instructions.
  - Verbal commands will be ok but patient cannot cooperate in any way
  - “Chronic bruxism needing splint and dental exam”

Medical History

- Thyroidectomy (total, performed in India) Benign causes
- B12 deficiency anaemia (2007)
- T2DM (2013)
- Fronto temporal dementia (2014)
- Vitamin D deficiency (2016)

- Penicillin allergy.
- Currently on Aspirin 100mg, Thyroxine 100mcg
- Other supplements- fish oil, magnesium, melatonin, Vitamin D, lecithin

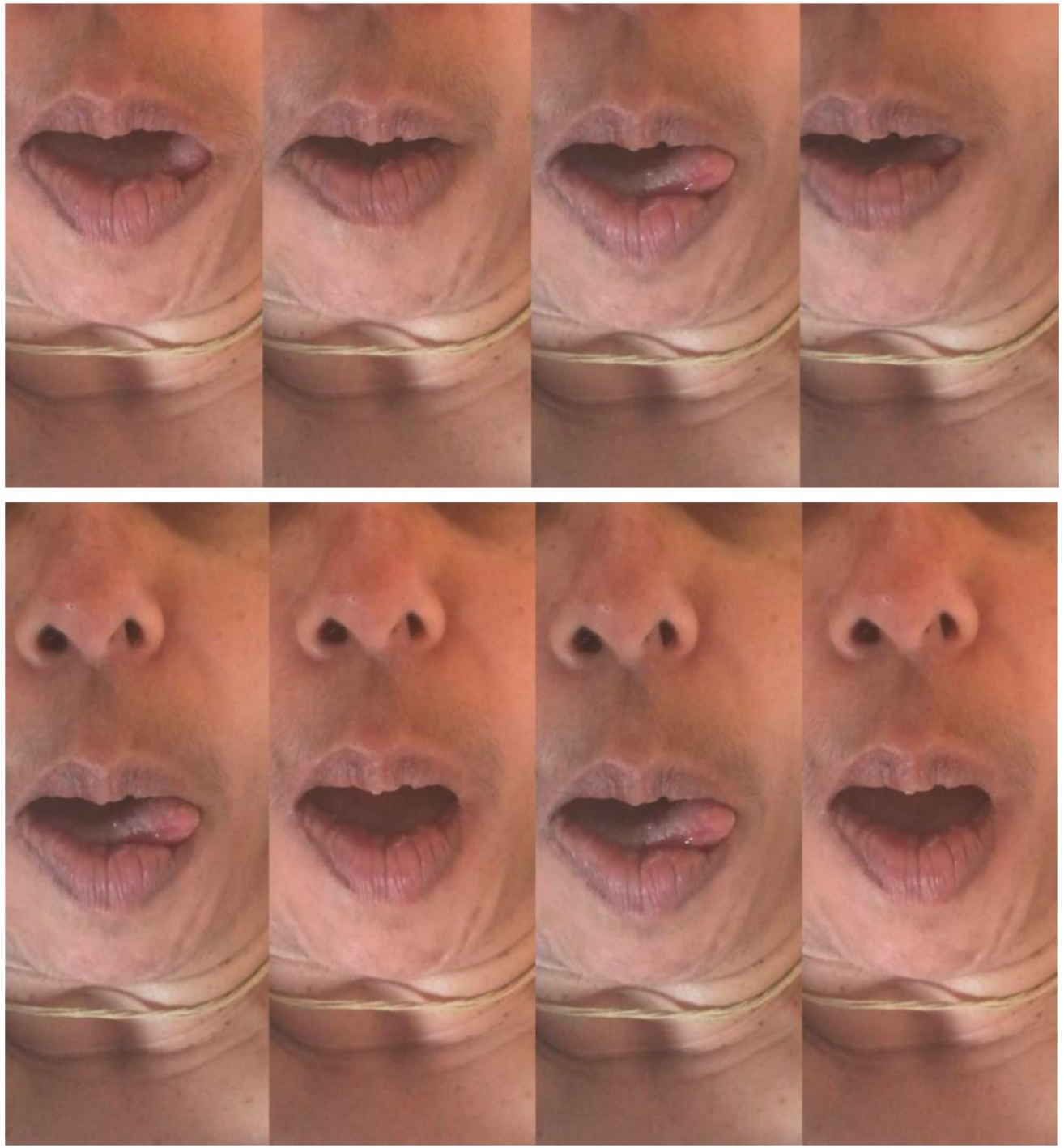
- Was on escitalopram 20mcg
- Was on risperidone 1mg ½ a night

Timeline

1. Dentist

    - Managed for bruxism

    - Splint was made, unable to be worn as patient cannot tolerate.



Oromandibular dystonia

- Prevalence about 3 to 30 per 100,000
- Possibly F>M
- Mean age of symptom onset between 31 and 58 years.

- ODs are intermittent and present as short, sustained muscle contractions resulting in abnormal muscle movements and posturing.
- Focal dystonias may be primary (idiopathic) or secondary e.g. underlying central nervous system pathology, such as infarctions and tumors .

Oromandibular dystonia

Jaw-opening, jaw-closing, jaw-deflecting, or jaw-retruding dystonia, or a combination of any of these.

The uncontrolled or involuntary mandibular movements may be repetitive or sustained.

Most ODs are idiopathic in etiology, accounting for 63% of cases reported.

Drug related?

Tardive or medication-induced extrapyramidal syndrome reactions

Table 2
Drug-induced extrapyramidal syndrome reactions

Dystonia	Involuntary, sustained, patterned, and often repetitive muscle contractions causing twisting movements or abnormal postures
Akathisia	A subjective report and objective manifestations of restlessness in the form of movement of the limb
Parkinsonism	Bradykinesia (slowness of movement) associated with at least one of rigidity, tremor, or postural instability

Table 1
Medications associated with tardive dyskinesia

Medication class	Medication
Conventional antipsychotics	Chlorpromazine
	Haloperidol
	Perphenazine
	Pimozide
	Trifluoperazine
Atypical antipsychotics	Clozapine
	Olanzapine
	Risperidone
Antiemetics	Metoclopramide
	Promethazine
Antiparkinsonian agents	Levodopa
	Benztropine
	Trihexyphenidyl
Anticonvulsants	Phenytoin
	Carbamazepine
Antihistamines	Diphenhydramine
	Ranitidine
Tricyclic antidepressants	Amitriptyline
	Doxepin
Selective serotonin reuptake inhibitors	Fluoxetine
	Paroxetine
	Sertraline

Cornett EM, Novitch M, Kaye AD, Kata V, Kaye AM. Medication-Induced Tardive Dyskinesia: A Review and Update. *The Ochsner Journal*. 2017;17(2):162-174.

Figure 3: Clinical photograph showing maxillo-mandibular fixation with elastics

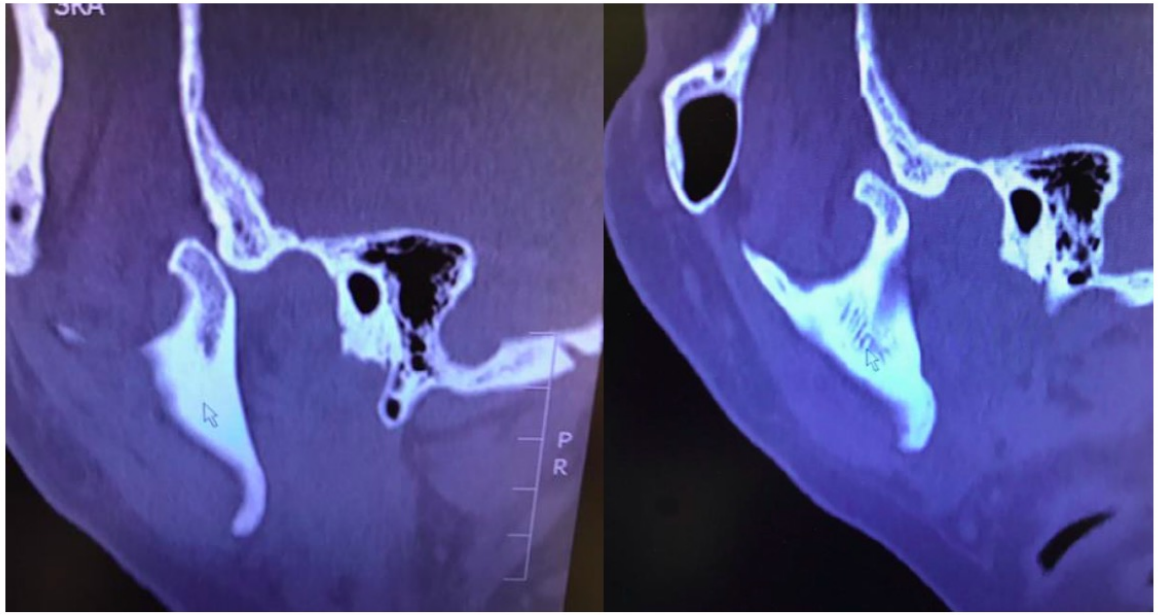


Figure 1: Computed tomography images showing dislocation of the left and right TM joints.

Bruxism is not the complete diagnosis!

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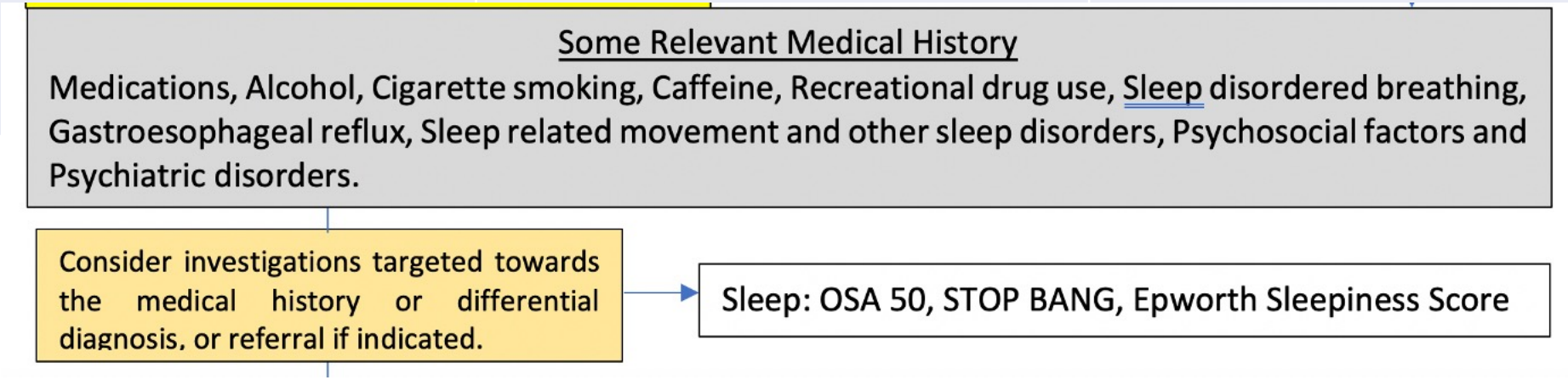
Sleep: OSA 50, STOP BANG, Epworth Sleepiness Score

Risk Factor		Notes
Alcohol	Increases risk for SB	Consuming more than 4 standard drinks
Cigarettes	Increases risk for SB, stimulates central dopaminergic activity	Needs further study
Caffeine	Stimulant	Some studies report: More than 600mg/day (withdrawal) or 6 cups of coffee



DRUG- INDUCED BRUXISM

A Spoonful of Oral Medicine

ANTIDEPRESSANTS

CITALOPRAM, ESCITALOPRAM, DULOXETINE, FLUOXETINE, FLUVOXAMINE, PAROXETINE, SERTRALINE*, VENLAFAXINE**

ANTIPSYCHOTICS

CHLORPROMAZINE, FLUPHENAZINE, HALOPERIDOL

DRUGS FOR ADHD

ATOMOXETINE, METHYLPHENIDATE

Teoh L, Moses G, McCullough MJ. A Review and Guide to drug associated oral adverse effects. Dental, Salivary and Neurosensory Reactions. Part 1. J Oral Pathol Med. 2019: 00:1-11

Reyad, A.A., Girgis, E., Ayoub, A. and Mishriky, R. Bruxism and psychotropic medications. Prog. Neurol. Psychiatry, 2020, 24: 31-35.

**most commonly reported*

DRUG INDUCED BRUXISM (PART 2)

A Spoonful of Oral Medicine

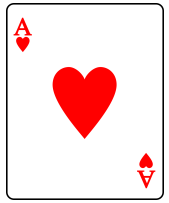
AMPHETAMINES (SPEED)

METHAMPHETAMINE (ICE)

3,4-METHYLENEDIOXYMETHAMPHETAMINE (MDMA; ECSTASY)

COCAINE

Are OSA patients always sleepy?



	In Sleep Clinics	In the general population
Sleepy	45%	30%
Disturbed sleep	20-30%	14%
Minimal-no symptoms	20-25%	56%

Why do we care about OSA?

- Accidents
- Depression
- Hypertension
- Diabetes
- Cardiovascular disease

Head nodding = Microsleep

Difficulty keeping eyes open / blurred vision = Earlier warning signs

Accidents

Factor	Risk
Alcohol 0.05%-0.08%	↑2-3
Sleep apnoea	↑2-7
<5 hours sleep	↑3
Driving 2-5am	↑5

Connor 2002

OSA 50 Screening Questionnaire	**If YES, score**
Waist circumference*: Male > 102cm Females > 88cm	3
Has your snoring ever bothered other people?	3
Has anyone noticed you stop breathing during your sleep?	2
Are you aged 50 years or over?	2
TOTAL SCORE	OUT OF 10

*Waist measurement to be measured at the level of the umbilicus

STOP BANG

- **Snoring ?**
  Do you **Snore Loudly** (loud enough to be heard through closed doors or your bed-partner elbows you for snoring at night)?
- **Tired ?**
  Do you often feel **Tired, Fatigued, or Sleepy** during the daytime (such as falling asleep during driving or talking to someone)?
- **Observed ?**
  Has anyone **Observed** you **Stop Breathing** or **Choking/Gasping** during your sleep
- **Pressure ?**
  Do you have or are being treated for **High Blood Pressure** ?
- **Body Mass Index more than 35 kg/m^2?**
- **Age older than 50 ?**
- **Neck size large ? (Measured around Adams apple)**
  For male, is your shirt collar 17 inches / 43cm or larger?
  For female, is your shirt collar 16 inches / 41cm or larger?
- **Gender = Male ?**

http://stopbang.ca/osa/screening.php

STOP BANG ctd

- OSA - Low Risk : Yes to 0 - 2 questions
  OSA - Intermediate Risk : Yes to 3 - 4 questions
  OSA - High Risk : Yes to 5 - 8 questions

or Yes to 2 or more of 4 STOP questions + male gender
or Yes to 2 or more of 4 STOP questions + BMI > 35kg/m^2
or Yes to 2 or more of 4 STOP questions + neck circumference 17 inches / 43cm in male or 16 inches / 41cm in female

- Different cut-off scores can be used to trade off sensitivity and specificity.

Berlin

Berlin Questionnaire©
Sleep Apnea

Height (m) _____ Weight (kg) _____ Age _____ Male / Female

Please choose the correct response to each question.

Category 1

1. Do you snore?
□ a. Yes
□ b. No
□ c. Don't know

If you answered 'yes':

2. You snoring is:
□ a. Slightly louder than breathing
□ b. As loud as talking
□ c. Louder than talking

Category 2

6. How often do you feel tired or fatigued after your sleep?
□ a. Almost every day
□ b. 3-4 times per week
□ c. 1-2 times per week
□ d. 1-2 times per month
□ e. Rarely or never

7. During your waking time, do you feel tired, fatigued or not up to par?
□ a. Almost every day
□ b. 3-4 times per week
□ c. 1-2 times per week
□ d. 1-2 times per month
□ e. Rarely or never

Table 2. Diagnostic utility of obstructive sleep apnoea screening questionnaires for detecting moderate-to-severe obstructive sleep apnoea

	Berlin Questionnaire[13]	STOP-BANG cut-off ≥3[16] ★	STOP-BANG cut-off ≥4[16]	OSA50[14] ★
Sensitivity* %	82	94	81	94
Specificity† %	39	32	51	31

Data taken from validation studies[14] and meta-analyses[13,16]

**Sensitivity refers to the proportion of subjects with OSA who have a positive questionnaire. (Note: for a highly sensitive test, a negative result is good at ruling out disease.)*

†*Specificity refers to the proportion of subjects without OSA who have a negative questionnaire. (Note: for a highly specific test, a positive result is good at ruling in disease.)*

In general, OSA screening questionnaires have good but not optimal sensitivity, and poor specificity for detecting AHI ≥15 events/hour.

OSA, obstructive sleep apnoea; AHI, Apnoea Hypopnoea Index

Hamilton and Chai-Coetzer 2019

Epworth Sleepiness Scale

- Feeling sleepy?

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

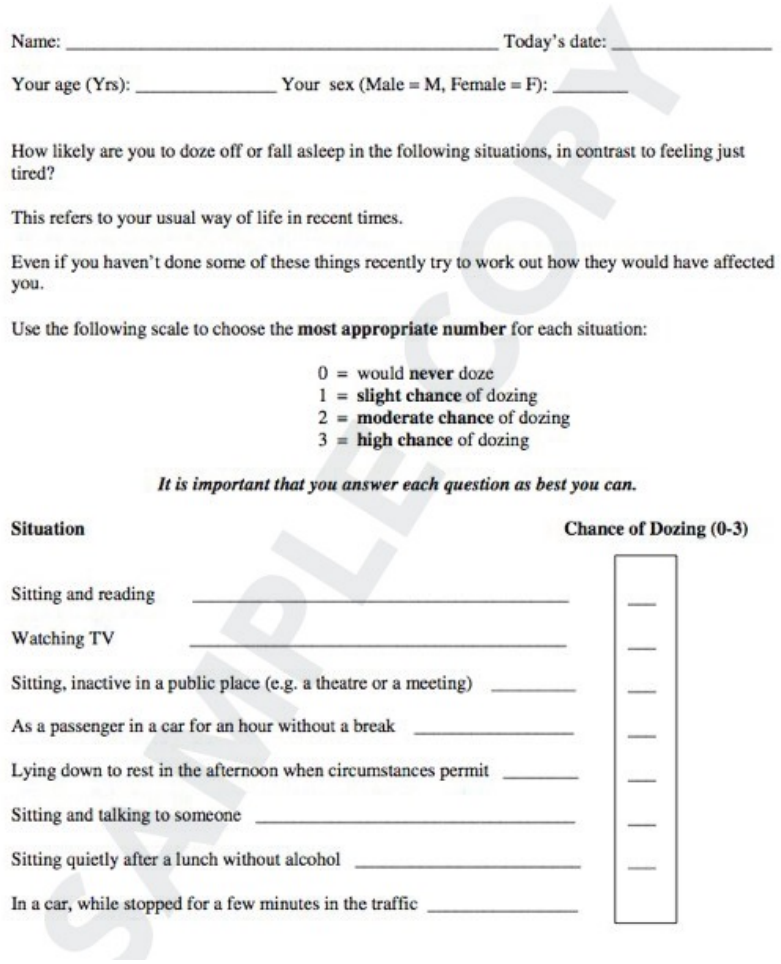
0	Would NEVER dose
1	Slight chance of dozing
2	Moderate chance of dozing
3	High chance of dozing

Epworth Sleepiness Scale

- Sitting and reading
- Watching TV
- Sitting, inactive in a public place (e.g. a theatre or a meeting)
- As a passenger in a car for an hour without a break
- Lying down to rest in the afternoon when circumstances permit
- Sitting and talking to someone
- Sitting quietly after a lunch without alcohol In a car, while stopped for a few minutes in the traffic

- **0-5 Lower Normal Daytime Sleepiness**
- **6-10 Higher Normal Daytime Sleepiness**
- **11-12 Mild Excessive Daytime Sleepiness**
- **13-15 Moderate Excessive Daytime Sleepiness**
- **16-24 Severe Excessive Daytime Sleepiness**

8 or more
Medicare



Name: _____ Today's date: _____

Your age (Yrs): _____ Your sex (Male = M, Female = F): _____

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

This refers to your usual way of life in recent times.

Even if you haven't done some of these things recently try to work out how they would have affected you.

Use the following scale to choose the **most appropriate number** for each situation:

0 = would **never** doze
1 = **slight chance** of dozing
2 = **moderate chance** of dozing
3 = **high chance** of dozing

It is important that you answer each question as best you can.

Situation	Chance of Dozing (0-3)
Sitting and reading	
Watching TV	
Sitting, inactive in a public place (e.g. a theatre or a meeting)	
As a passenger in a car for an hour without a break	
Lying down to rest in the afternoon when circumstances permit	
Sitting and talking to someone	
Sitting quietly after a lunch without alcohol	
In a car, while stopped for a few minutes in the traffic	

http://epworthsleepinessscale.com/

Epworth Sleepiness Scale

- ESS is not correlated with SDB at mild to moderate levels in women and has a smaller association than in men with severe SDB

- Poor marker of OSA but does predict response to treatment when elevated

Lipford et al. 2019

Facets of Bruxism

- Clinical Signs and Symptoms
- Is it Bruxism?
- Is it Awake or Sleep Bruxism?
- Is it harmless, risk or protective behaviour?
- Is it primary or secondary?
- How bad is it?
- Are there modificable factors? Stress?
- Am I going to manage this?
- How?

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2023, VOL. 41, NO. 2, 178–184
https://doi.org/10.1080/08869634.2020.1829289

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CLINICAL PRACTICE

Awake bruxism frequency and psychosocial factors in college preparatory students

Mariana Barbosa Câmara-Souza DDS, MSc[a], Amanda Guimarães Carvalho DDS[a], Olívia Maria Costa Figueredo DDS, MSc[a], Alessandro Bracci DDS[b], Daniele Manfredini DDS, MSc, PhD[c] and Renata Cunha Matheus Rodrigues Garcia DDS, MSc, PhD[a]

[a]Piracicaba Dental School, University of Campinas, Piracicaba, Brazil; [b]School of Dentistry, University of Padua, Padua, Italy; [c]School of Dentistry, University of Siena, Siena, Italy

ABSTRACT

Objective: To assess the frequency of reported masticatory muscles activity during wakefulness (i.e., awake bruxism [AB]), levels of anxiety, depression, stress, and the oral health-related quality of life (OHRQoL) in college preparatory students.
Methods: Sixty-nine college preparatory students participated in the study. AB was evaluated by the Oral Behaviors Checklist (OBC) and a smartphone-based ecological momentary assessment (EMA; [Bruxapp®]). Anxiety and depression were measured by the Hospital Anxiety and Depression Scale, stress was evaluated by the Perceived Stress Scale, and OHRQoL was obtained by The Oral Health Impact Profile-14. Data were analyzed by Pearson's correlation coefficient ($\alpha = 0.05$).
Results: The average EMA-reported frequency of AB behaviors was 38.4%. Significant correlations were found between AB and the OBC, anxiety, depression, stress, and OHRQoL ($p < 0.001$).
Conclusion: College preparatory students demonstrated moderate frequency of AB, which was significantly correlated with psychosocial factors.

KEYWORDS
Bruxism; Bruxapp; youth; quality of life; anxiety; stress

Introduction

Bruxism is a behavior characterized by clenching and/or grinding of teeth, and/or by bracing or thrusting of the jaw muscles [1,2]. According to the most recent international expert consensus [1], bruxism may have two circadian manifestations: sleep and awake bruxism (AB).

AB has a multifactorial etiology, with an interaction of biological and psychosocial factors [3]. Genetics, environment, and lifestyle factors have been associated with increased susceptibility of AB occurrence in different age groups [4]. Literature shows that reports of this behavior may occur in approximately 22–36% of the population [5,6], with higher prevalence in younger individuals [7]. Moreover, it is associated with increased presence of painful TMD, which might reduce quality of life [8].

Some authors [9] demonstrated high prevalence of TMD signs and symptoms in college preparatory students, which were associated with emotional tension, anxiety, and oral parafunctions. For instance, around 53% of subjects aged between 16 and 19 years have shown at least one sign and/or symptoms of TMDs [10,11]. The college entrance exam is a highly competitive environment and is usually accompanied by social and/or family pressure, being considered an extremely stressful period. Consequently, anxiety, stress, and other emotional disorders are commonly found in this group.

Emotional factors may induce AB, and higher frequencies of this behavior could lead to orofacial pain, which would, cyclically, worsen psychological symptoms. Thus, it is relevant to assess such factors in this young population. A recent study has introduced the concept of smartphone-based ecological momentary assessment (EMA) to quantify AB frequency [12]. This method has been used in several clinical fields [13,14], providing relevant real-time data collection during the day, based on the natural environment of each individual. Thus, such an approach has been successfully proposed for AB assessment.

Although previous studies [15–17] have tried to associate the presence of oral parafunctions with the academic stage (high school, undergraduate, graduate), the correlation between AB frequency and psychological factors has not been described. Therefore, this clinical study aimed to evaluate AB frequency in college preparatory students and

CONTACT Renata Cunha Matheus Rodrigues Garcia regarcia@unicamp.br Department of Prosthodontics and Periodontology, Piracicaba Dental School, University of Campinas, Piracicaba, SP, Brazil

If managing, consider assessment of Severity of Bruxism: Instrumental and Non-Instrumental Approaches

- Non: Self report: time frame and presence
- Bed partner report
- Smartphone applications
- Instrumental: Electromyographic recordings, EMA, Polysomnography,

Proposed Grading

1. Possible AB/SB based on self report
2. Probable AB/SB based on positive clinical inspection, with or without a positive self report
3. Definite AB/SB with positive instrumental assessment, with or without clinical inspection/self report

Principles of Management

- Referral if indicated
- Education and Reassurance of patient
- Discussion of prognosis and expectations (can you "cure" bruxism? Is it a disorder?)
- Lifestyle and risk/factor stress reduction

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If primary bruxism, management options include:

-Oral Appliance

- Pharmacological approach: Botulinum toxin, clonazepam or other benzodiazepines, clonidine, buspirone (beware SEs)
-Biofeedback
-Cognitive behavioural approaches, hypnotherapy, sleep hygiene, relaxation, psychological intervention

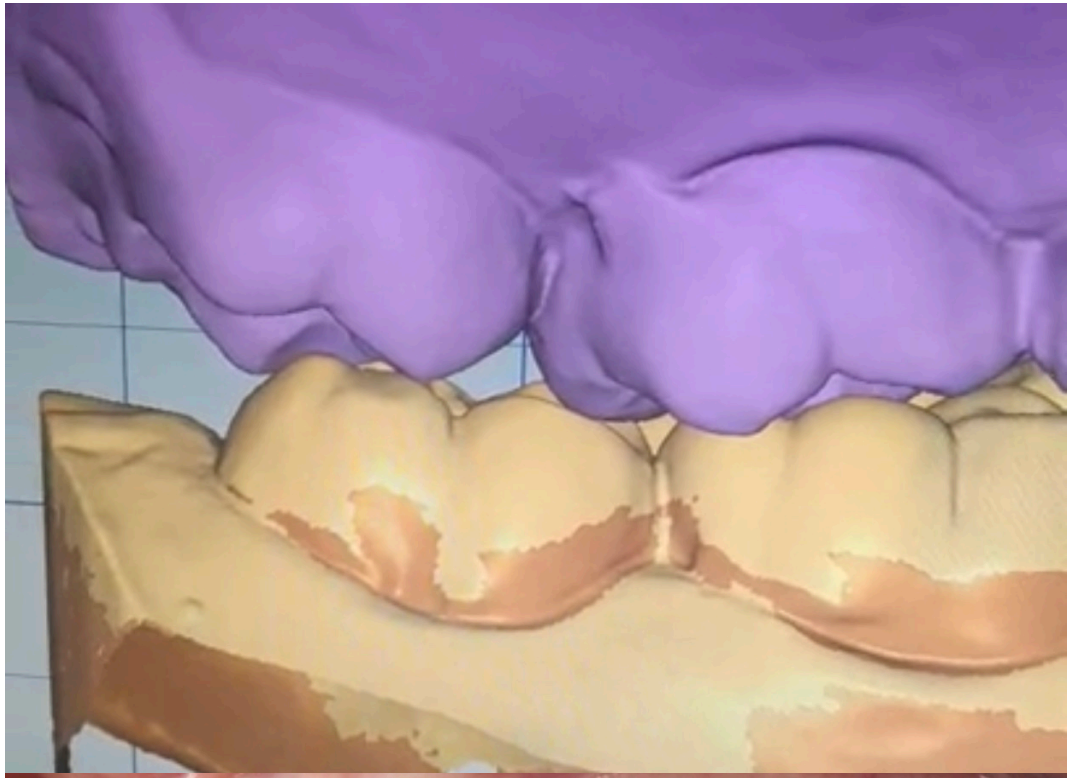
Management

- Education/reassurance
- Psychosocial Management
- Habit reversal
- Ecological momentary assessment
- Physiotherapy
- Occlusal splint?

<u>Bruxism</u>

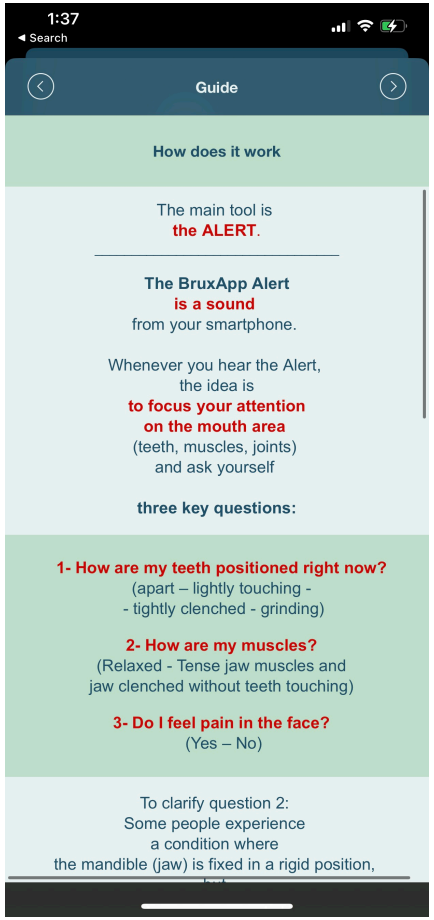
- Flat plane
- Hard
- Light even contacts
- Not together with retainers!

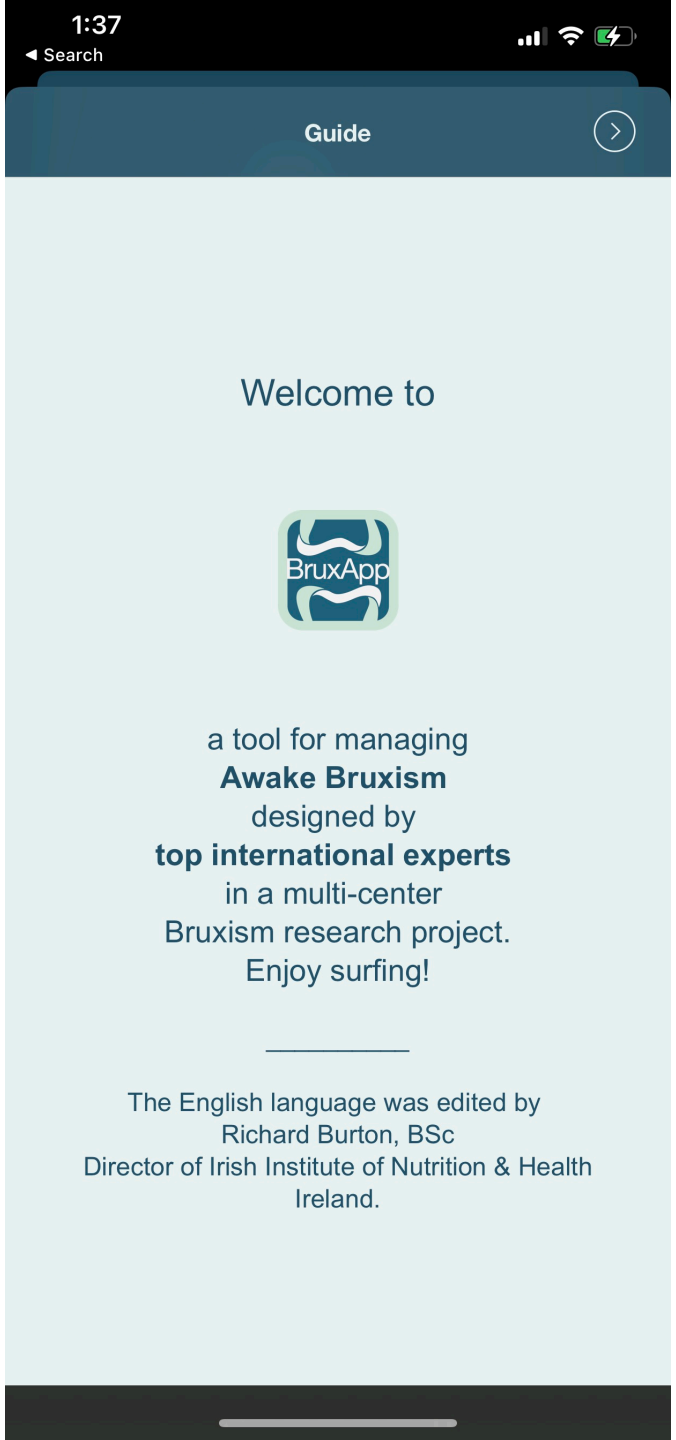
Don’t just “Splint and Split”!




A Spoonful of Oral Medicine
OralMedicineOralPathology
Your Splint's Worst Enemy!

BruxApp

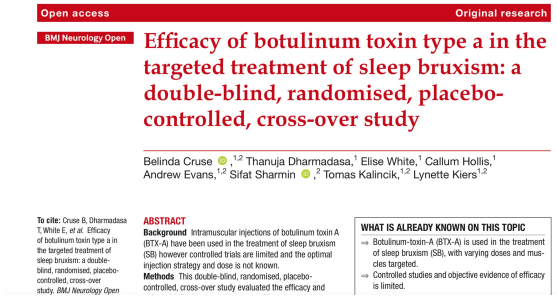

1:37
Search
Guide
How does it work
The main tool is
the ALERT.
The BruxApp Alert
is a sound
from your smartphone.
Whenever you hear the Alert,
the idea is
to focus your attention
on the mouth area
(teeth, muscles, joints)
and ask yourself
three key questions:
1- How are my teeth positioned right now?
(apart – lightly touching -
- tightly clenched - grinding)
2- How are my muscles?
(Relaxed - Tense jaw muscles and
jaw clenched without teeth touching)
3- Do I feel pain in the face?
(Yes – No)
To clarify question 2:
Some people experience
a condition where
the mandible (jaw) is fixed in a rigid position,


1:37
Search
Guide
Welcome to
BruxApp
a tool for managing
Awake Bruxism
designed by
top international experts
in a multi-center
Bruxism research project.
Enjoy surfing!
The English language was edited by
Richard Burton, BSc
Director of Irish Institute of Nutrition & Health
Ireland.


1:37
Search
Guide
What is BruxApp
BruxApp
will help you
focus on what's happening
in and around your mouth,
specifically:
✓ the teeth
✓ the jaw muscles
✓ the temporomandibular joints
(these allow the mouth to open and close)
To manage the condition effectively,
you must first learn
to be aware of your bruxism
and
understand what it can lead to.
BruxApp provides:
✓ AWARENESS
of bruxism.
You will need to start noticing what your muscles are
doing,
so you can activate the right corrective strategies.
As awareness improves,
you will start to benefit from
✓ RE-EDUCATION.
By learning how
to manage emotional tension,
any harmful muscle activity
(i.e., bruxism)
will gradually disappear as

Others to consider?

- Botox injections
- Pharmacotherapy



Double blinded, randomised, placebo-controlled, cross-over study.
N=35

Reviewed Bruxism Index (average bruxism events per hour of sleep using surface EMG) of 3 groups injected with BTX-A compared to a placebo group:

i) bilateral masseter muscles (60U),

ii) bilateral masseter and temporalis muscles (90U),

iii) bilateral masseter, temporalis, and medial pterygoid muscles (120U).

Table 1 Baseline participant data

	All participants	Group A	Group B	Group C
Age years (mean±SD)	42.1±13.98	51.5±11.54	39±12.9	38.3±14.64
Sex (F, M)	14,8	5,1	3,4	3,6
Baseline BI (mean±SD)	8.29±2.88	7.04±2.44	10.14±3.71	7.69±1.77

BI, Bruxism Index; F, female; M, male.

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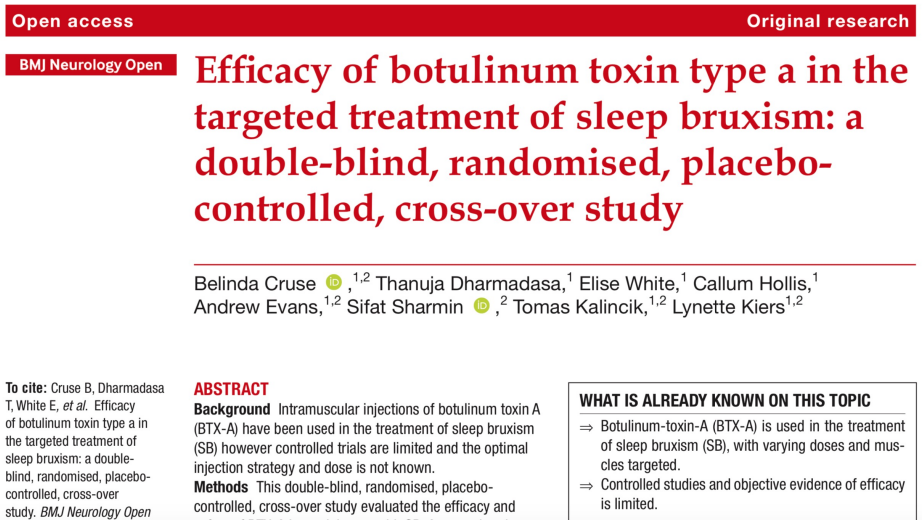
Bruxism Index was significantly lower at 4 weeks after active treatment (compared with placebo) in all groups, but not sustained at 12 weeks.

Improvement was greater with higher doses of BTX-A injected.

In summary, BTX-A administered into more muscles (i.e masseter, temporalis, and medial pterygoid muscles) and at a higher dose in subject with higher Bruxism Index at baseline showed the greatest benefit.

What happens at 3 months?



Open access Original research

BMJ Neurology Open

Efficacy of botulinum toxin type a in the targeted treatment of sleep bruxism: a double-blind, randomised, placebo-controlled, cross-over study

Belinda Cruse ,[1,2] Thanuja Dharmadasa,[1] Elise White,[1] Callum Hollis,[1] Andrew Evans,[1,2] Sifat Sharmin ,[2] Tomas Kalincik,[1,2] Lynette Kiers[1,2]

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ABSTRACT

Background Intramuscular injections of botulinum toxin A (BTX-A) have been used in the treatment of sleep bruxism (SB) however controlled trials are limited and the optimal injection strategy and dose is not known.

Methods This double-blind, randomised, placebo-controlled, cross-over study evaluated the efficacy and

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Botulinum-toxin-A (BTX-A) is used in the treatment of sleep bruxism (SB), with varying doses and muscles targeted.

⇒ Controlled studies and objective evidence of efficacy is limited.

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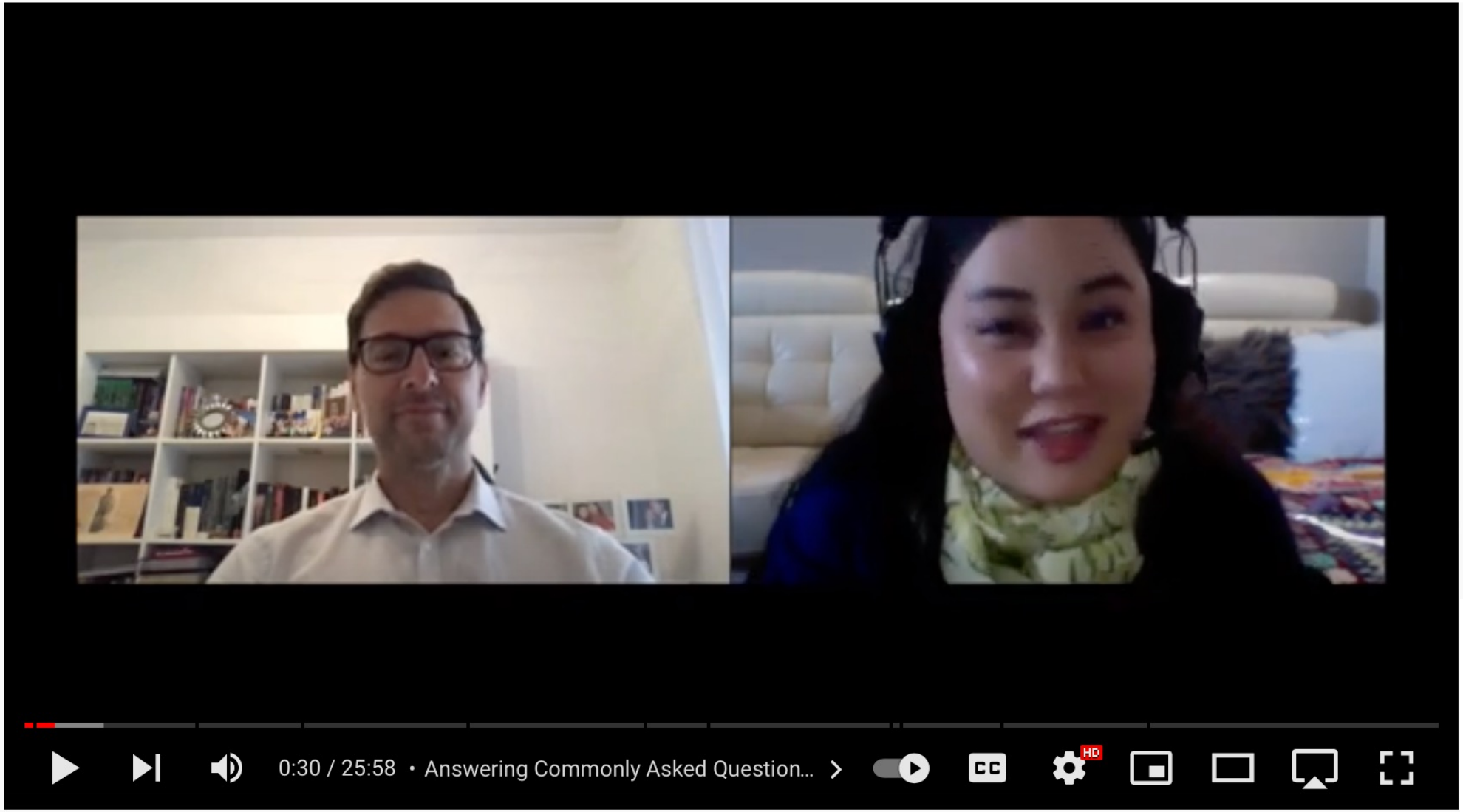
Further Reading

Ref and Reading:

- Lobbezoo, F., Ahlberg, J., Raphael, K., Wetselaar, P., Glaros, A., Kato, T., Santiago, V., Winocur, E., De Laat, A., De Leeuw, R., Koyano, K., Lavigne, G., Svensson, P. and Manfredini, D., 2018. International consensus on the assessment of bruxism: Report of a work in progress. *Journal of Oral Rehabilitation*, 45(11), pp.837-844.
- Manfredini, D., Ahlberg, J., Aarab, G., Bracci, A., Durham, J., Ettlin, D., Gallo, L., Koutris, M., Wetselaar, P., Svensson, P. and Lobbezoo, F., 2020. Towards a Standardized Tool for the Assessment of Bruxism (STAB)—Overview and general remarks of a multidimensional bruxism evaluation system. *Journal of Oral Rehabilitation*, 47(5), pp.549-556.



#teethgrinding #ASpoonfulofMedicine #bruxism

Answering Commonly Asked Questions about Bruxism with Professor Daniele Manfredini

Is there a genetic link?

- Yes.

- Not well studied, but appears to have an association with parental grinding
- Postulated as an autosomal dominant inheritance

Take Home Summary

Tooth wear or other single clinical indicators are not pathognomonic for bruxism

Bruxism is common; think bigger picture

Bruxism is not a single entity

Bruxism is not a movement disorder or a sleep disorder in otherwise healthy individuals.

Don’t have all the answers. Divergences in data collection and methods underscore the need for further research


THANK
YOU
THANK