

Craniofacial Pain: A Case-Based Approach to Navigating Common Pitfalls

CareQuest Institute Continuing Education Webinar

January 11, 2024

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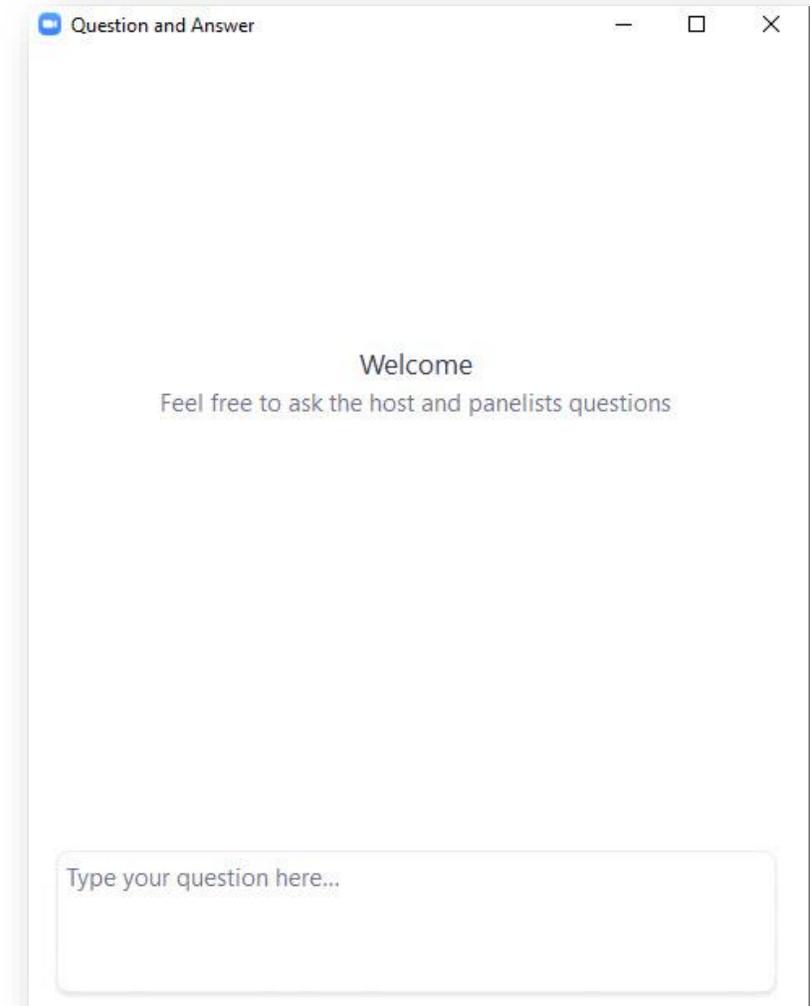
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*Full disclosures available upon request



Question & Answer Logistics

- Feel free to enter your questions into the **Question & Answer box** throughout the presentations.
- We will turn to your questions and comments toward the end of the hour.



Learning Objectives

At the end of this webinar, you'll be able to:

- Recognize the characteristics of temporomandibular disorders (TMD) and trigeminal neuralgia, including their symptoms, diagnostic criteria, and impact on patient quality of life.
- Recognize strategies for managing craniofacial pain, emphasizing the importance of a tailored, least invasive approach for each patient.
- Identify strategies to avoid common pitfalls in diagnosing and treating TMD and trigeminal neuralgia.

Craniofacial Pain: A Case-Based Approach to Navigating Common Pitfalls



WEBINAR | Thursday, January 11, 2024 | 7–8 p.m. ET | ADA CERP Credits: 1

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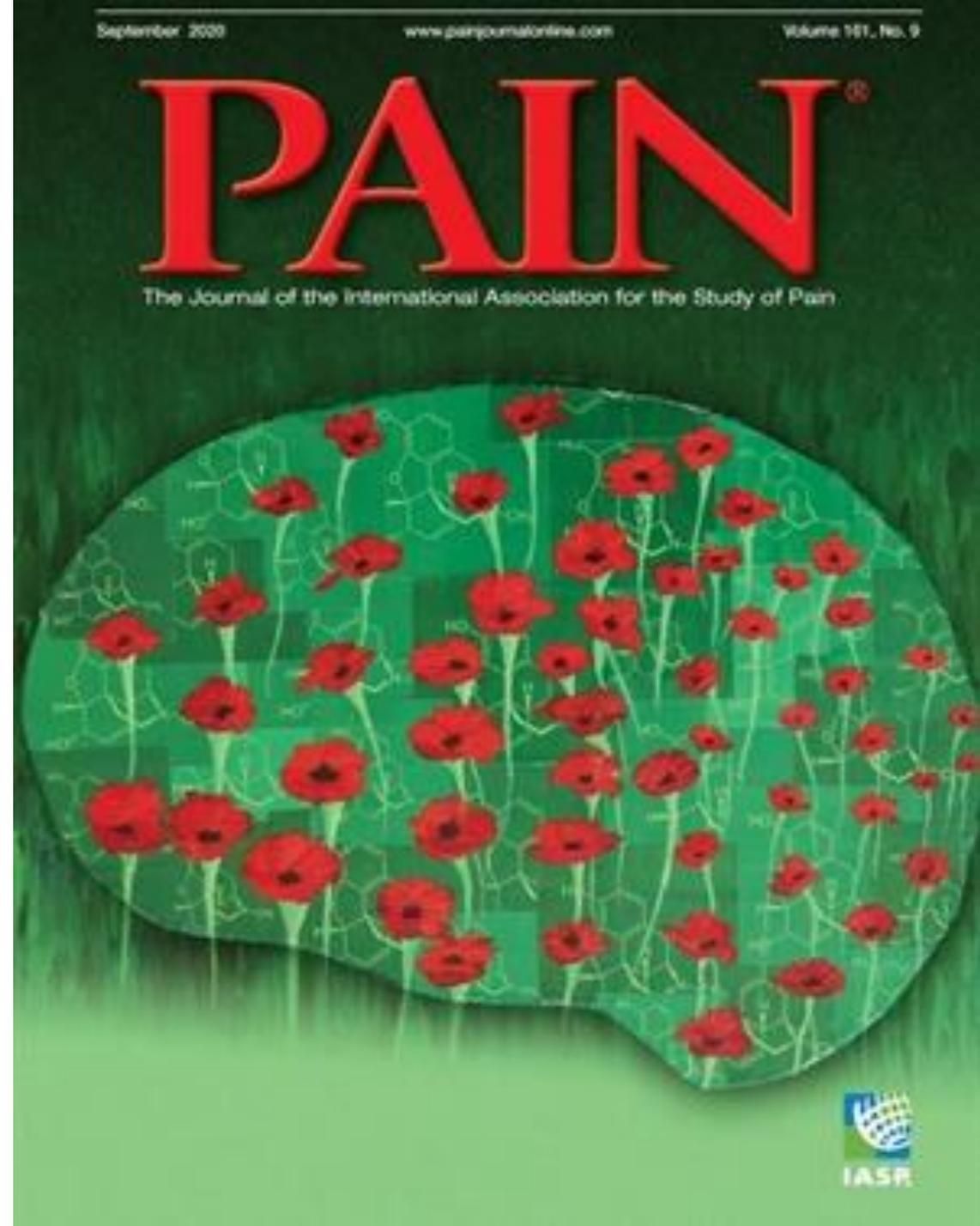
Orofacial Pains

Sujay A. Mehta, DMD, MPH

January 11, 2024

Pain

- An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.
- A personal experience not strictly from sensory neurons.
- People learn pain concepts.
- Respect people's experience.
- Adverse effects on function.
- Non-verbal expression of pain.



Orofacial Pain

- The specialty of dentistry encompassing the diagnosis, management, and treatment of pain disorders to the jaw, mouth, face, head, and neck.
- OFP recognized as a specialty on March 31, 2020.

What is the Scope of Orofacial Pain?

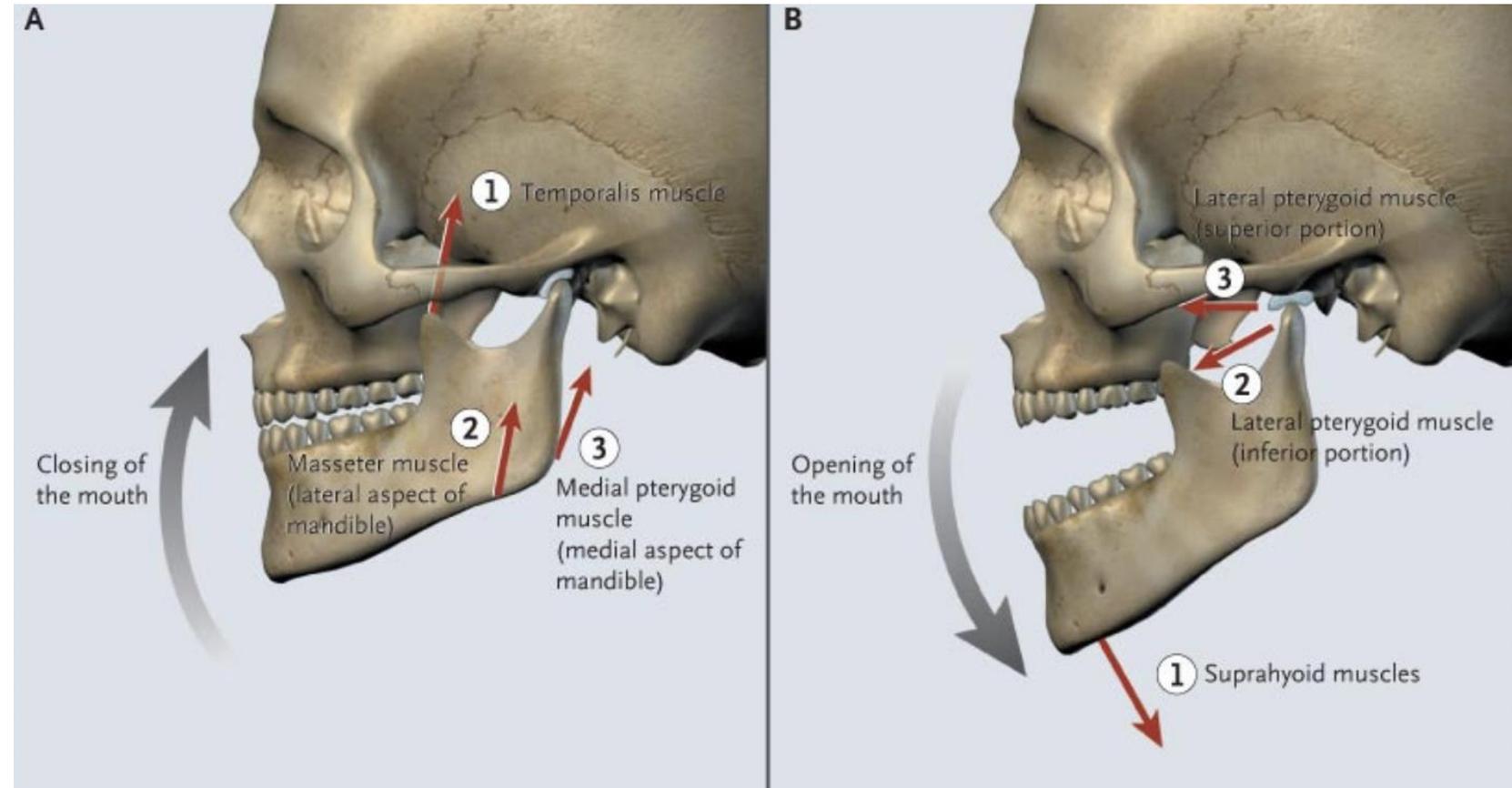
- Musculoskeletal
- Neuropathic
- Neuromuscular
- Psychogenic



GLOBAL YEAR AGAINST
OROFACIAL PAIN
OCTOBER 2013 - OCTOBER 2014

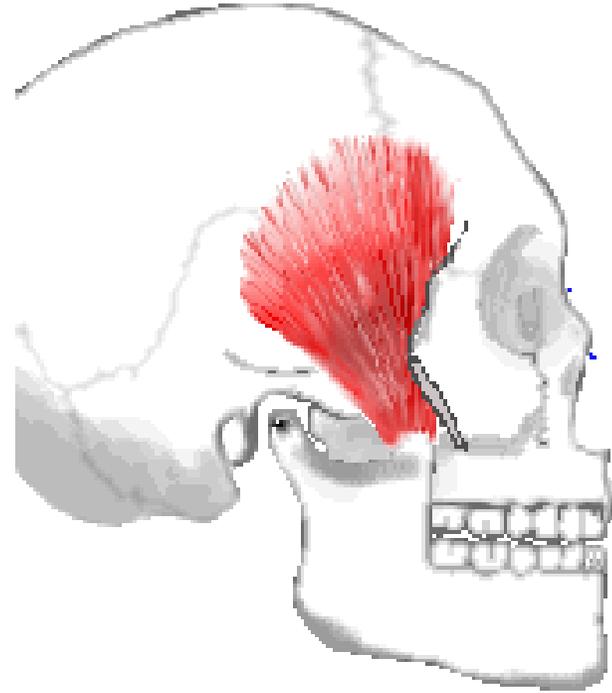
Joint Disorders

- Joint pain
- Hypomobility
- Hypermobility
- Joint diseases



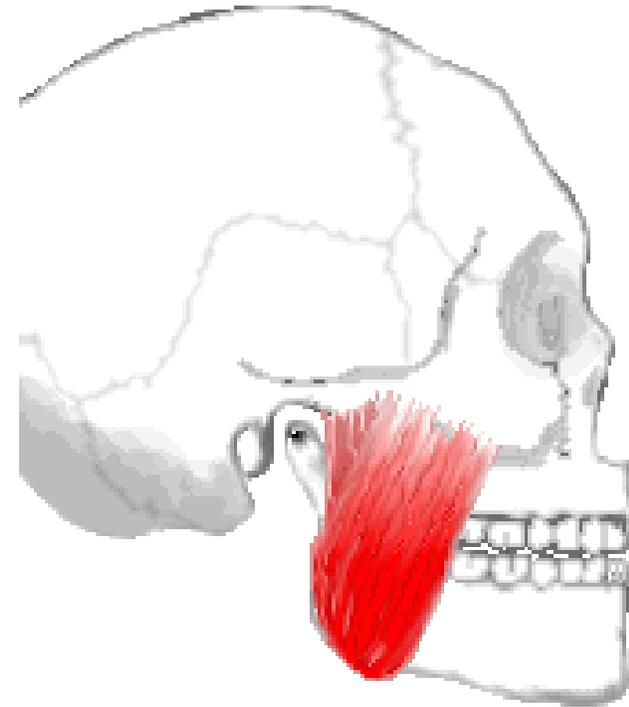
Muscular Pains

- Muscle pain
- Tendon
- Myositis
- Spasm



Muscular Pains

- Hypertrophy
- Neoplasm
- Movement disorders
- Central / Systemic



Management

- Self-care
- Biobehavioral
- Physical Modalities
- Oral appliances
- Occlusal treatments

Screening Questions

- Difficulty or pain with opening the mouth?
- Does your jaw lock, stick, or go out?
- Difficulty or pain with chewing, talking, or intimacy?
- Jaw stiffness, tightness, or fatigue?
- Jaw joint sounds or noises?
- Pain near the ears, temples, or cheeks?
- Frequent headaches, neck pains, or toothaches?
- Any recent injury to the head, neck, or jaw?
- Recent changes to your bite?
- Past treatments for facial pains or jaw pains?

History

- Chief complaint
- Medical history
- Dental history
- Psychosocial history

Exam Procedures

- Range of motion: opening and lateral excursions
- Palpate the TM joints
- Auscultate or palpate for joint sounds: clicking and crepitation
- Palpate masseters, temporals, posterior, and lateral neck muscles
- Oral exam: excessive occlusal wear, tooth mobility, buccal mucosa ridging, tongue scalloping
- Symmetry and alignment of face, dental arches

Medications for TMD

Brian E. Cairns, PhD, DrMed, ACPR, RPh

January 11, 2024



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Pharmacotherapy for Temporomandibular Disorders (TMD)



a place of mind

Brian E. Cairns PhD, DrMed, ACPR

Temporomandibular Disorders Pain Mechanisms

- Peripheral (tissue specific nociceptor sensitization)
- Central mechanisms (central sensitization & diminished descending inhibition)
- Psychosocial (anxiety, depression, stress, maladaptive coping, parafunctional activities)

Clin Oral Invest (2006) 10:261–268

265

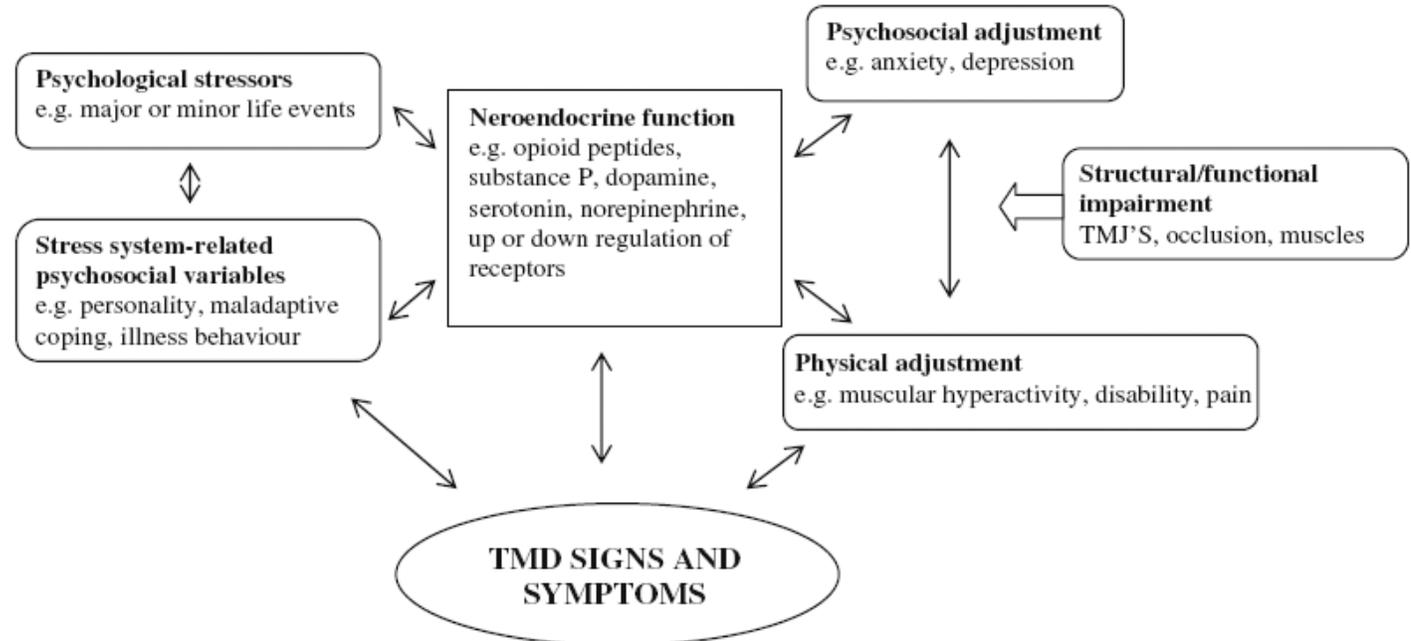


Fig. 1 A range of psychosocial (central event) and physical variables (peripheral events) may modify or exacerbate the effects of stressors on disease-related outcomes

95% of Recommendations for TMD Treatment Involve Analgesic Medications

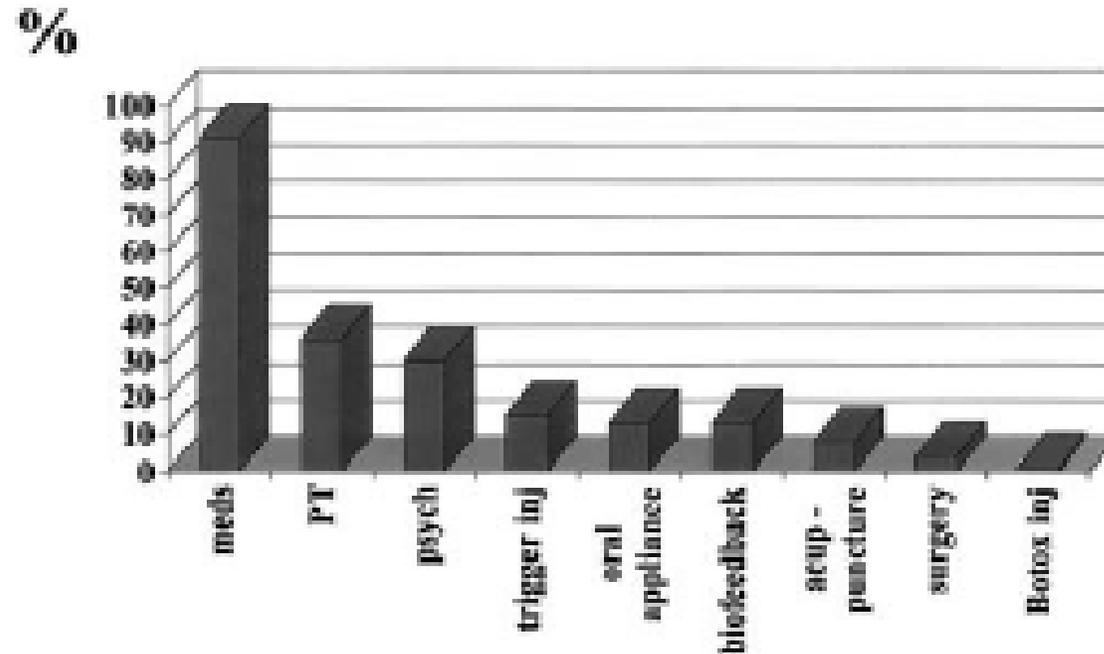


FIGURE 3. Treatment recommendations by the center for patients with chronic orofacial pain. meds, medication; PT, physical therapy; psych, psychiatric management; Inj, injections; Botox, botulinum toxin.

Israel et al 2003

Non-Steroidal Anti-Inflammatory Drugs

- Reduction of prostaglandins (PGE₂) through inhibition of cyclooxygenase
- Full benefit may not be seen for 3 weeks or longer, a two-week trial suggested
- Treatments have very low evidence, with short duration studies and low numbers of subjects studied.

Ibuprofen	600mg po TID	OTC, max dose 1800-2400 mg/day
Naproxen	500mg po BID	OTC, max dose 1500 mg/day
Diclofenac	50mg po BID	Increased cardiovascular risk
Diclofenac 2.32%	2g BID to affected area	Facial irritation, may take weeks to achieve effectiveness
Piroxicam	20 mg po daily	risk of GI issues high***

Non-Steroidal Anti-Inflammatory Drugs

Chronic oral NSAID use may result in:

- Decrease renal function (avoid in kidney dysfunction)
- Gastrointestinal ulceration (can use with proton pump inhibitor, COX2 selective agent celecoxib not an effective alternative)
- Increased blood pressure in susceptible individuals (uncontrolled HT, ACE inhibitors)
- Anti-platelet actions (avoid in patients treated with anticoagulants).
- Acetaminophen (paracetamol) may be considered if NSAIDs contraindicated, but no evidence of efficacy in TMDs

Skeletal Muscle Relaxants

- Skeletal muscle relaxants act in the central nervous system to reduce motor neuron excitability leading to decreased muscle tone.
- Used for the treatment of myofascial TMD pain, often in combination with an NSAID (e.g. diazepam and ibuprofen).
- Evidence for short-term use only (2-3 weeks).

cyclobenzaprine	10 mg po HS	significant sedation, impaired coordination, interacts with antidepressants (MAOIs, tricyclics, SNRIs), trazodone
diazepam	5 mg po QID	significant sedation, amnestic properties, impaired coordination

Antidepressants

- Enhance endogenous descending inhibition of pain
- Slow onset to full efficacy (several weeks required for effect)
- Tricyclic antidepressants (TCAs), serotonin selective reuptake inhibitors (SSRIs) and serotonin noradrenaline reuptake inhibitors (SNRIs) are commonly used, but few have been subjected to clinical trials in TMD

amitriptyline 25 mg po HS

sedation, dizziness, blurred vision,
constipation, dry mouth

Gabapentinoids

- Bind to the $\alpha_2\delta$ subunit of voltage gated calcium channels
- Over time, may decrease transport and synthesis of $\alpha_2\delta$ subunits resulting in decreased calcium influx
- May take 8 weeks or longer to see effect
- Some efficacy for myofascial TMD pain

gabapentin	300 mg po daily (HS), increase by 300 mg q72h until pain controlled or maximum dose of 4200 mg	dizziness, mental clouding, highly sedating
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Botulinum Neurotoxin

- Destroys SNAP 25, a protein critical to vesicular release of neurotransmitters
- Decreased release of acetylcholine from motor neuron axon terminals at the neuromuscular junction lowers muscle tone
- Decreased release of glutamate and neuropeptides from the endings sensory afferent fibers decreases neurogenic inflammation and raises mechanical pain threshold
- Onset of analgesia may be within hours, lasting months between injections

botulinum
neurotoxin

25-50 units depending
on muscle q3-4 months

unintended muscle weakness, allergic
reaction

Intraarticular (TMJ) Injection

- Indicated for limited mouth opening, joint pain, and inflammation due to their anti-inflammatory actions
- Corticosteroids have a short duration of effect, should be used no more than three times per year – response declines with repeated use

triamcinolone

(betamethasone, hydrocortisone, methylprednisolone)

10-20mg IA q3-4 months

post injection flare, pain, exacerbation of degenerative joint changes (osteoporosis with long term use, risk for osteonecrosis?)

hyaluronic acid

many different protocols

pain, bruising, redness, itching, and swelling

Opioid Analgesics for TMD

- Reserved for moderate to severe chronic TMD pain that has not responded adequately to all other analgesic treatments
- No clinical trials demonstrating the effectiveness of oral opioid analgesics in TMD

Case-Based Learning

Sujay A. Mehta, DMD, MPH

January 11, 2024

Case

40-year-old female presents with toothache & consults her local dental office

Dental Office

- Routine endodontic procedure with obturation
- Rx NSAID, a “dental rinse”, and steroid

Returns to Dental Office

- Pt c/o 2 types of pains
- “Nasty”
- No sign of infection but there is limited opening
- Rx physio, Endo, & Oral Med consult

Endodontist

- No obvious dental / endo pathology
- Rx NSAIDS
- Endodontist agrees to Oral Med consult

Oral Med

- At this point pt has significant limited opening
- Rx Physio and TP injection
- Pt elects to try physio - not keen to an injection to their face

Family MD

- History noted for “dental procedure”
- Rx antibiotics
- Recommended a colleague from oral surgery

Physiotherapist

- History reviewed a change to pain quality after dental procedure with trial to NSAIDS, ABX, and concerns to limited opening
- After a few visits, it seems clear pain is unilateral, but they have an exaggerated pain reaction to rehab

Oral & Maxillofacial Surgeon

- Hx noted for prior Endo
- Current pain and limited opening
- Rx
 - Return to dentist for oral appliance
 - NSAID & muscle relaxant
 - MRI of TMJs

Emergency Department

- Attends ED with complaints of severe pain
- Unilateral pains following dental procedure
- No benefit from NSAIDs and muscle relaxants
- Rx Gabapentin 100 mg bid

Current

- Carbamazepine 400 mg bid
- MRI confirmed vascular loop contacting trigeminal nerve at base of brain
- Pending neurosurgical consult

Medications for Trigeminal Neuralgia

Brian E. Cairns, PhD, DrMed, ACPR, RPh

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Pharmacotherapy for Trigeminal Neuralgia



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Pharmacological Treatment of Trigeminal Neuralgia

- The similarity of signs and symptoms of trigeminal neuralgia and other orofacial pain conditions often complicate the diagnosis.
- First line management of this condition is pharmacological suppression of aberrant afferent discharge.
- There are no proven abortive treatments for paroxysms, so therapy is focused on prophylaxis of attacks and reduction of ongoing pain.
- The effectiveness of pharmacological therapies commonly decrease over time.

Carbamazepine

- Voltage gated sodium channel blocker, anticholinergic
- Electrocardiogram should be undertaken to confirm no atrioventricular conduction abnormalities (contraindication to use)
- 100 mg po daily or BID, increase by 100 mg q2d up to 1600mg maximum dose to relieve pain
- Rare Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) associated with HLA-B*1502 allele
- Regular blood tests to monitor cell counts, electrolytes and organ function required
- Mutagenic, teratogenic
- Common fatigue, drowsiness, cognitive difficulties, disturbed sleep, gait imbalance
- Many drug interactions due to metabolism by CYP3A4

Oxcarbazepine

- Derivative of carbamazepine (200 mg carbamazepine=300 mg oxcarbazepine) with similar mechanism
- Electrocardiogram should be undertaken to confirm no atrioventricular conduction abnormalities (contraindication to use)
- 300-2700 mg po daily (BID to QID), increase dose 300mg q3d
- Common fatigue, drowsiness, cognitive difficulties, disturbed sleep, gait imbalance

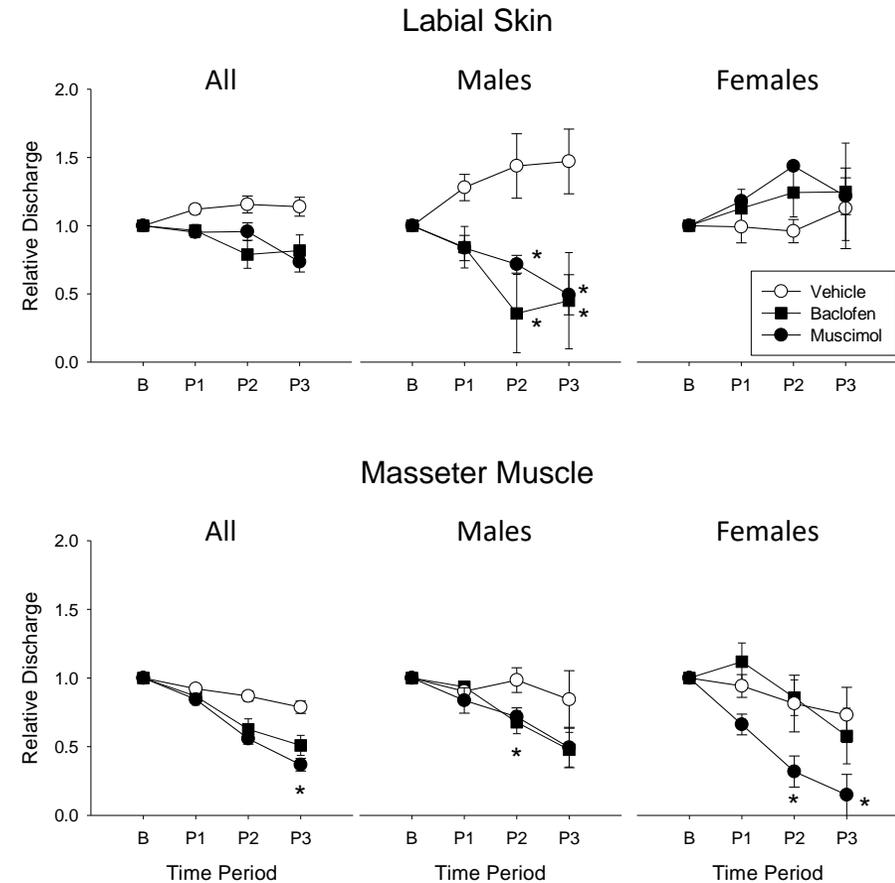
Baclofen

GABA_B receptor agonist

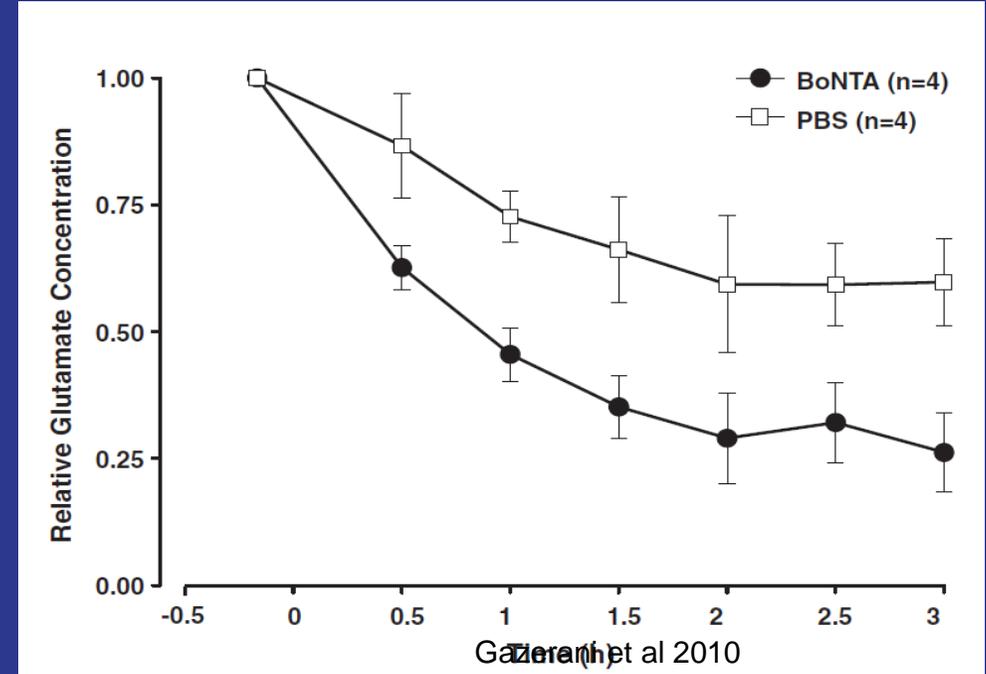
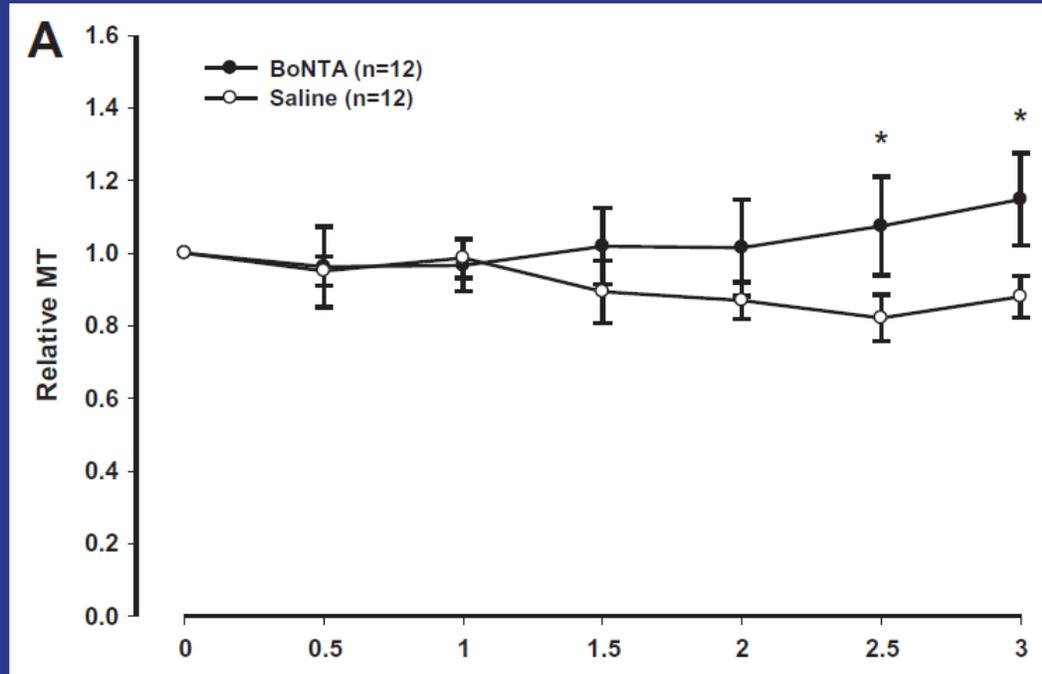
Activation of GABA_B receptors has been shown to inhibit sensory transmission through the trigeminal ganglion

10 mg po daily up to 100 mg, increase by 5 mg q3d, tid with higher doses

Nausea, somnolence, tiredness, and gastrointestinal symptoms



Botulinum Neurotoxin



- Dose 25-100 units into trigger zone q3months
- Transient facial paralysis, facial asymmetry or edema at the injection site

Other Analgesics

- Lamotrigine, gabapentin, pregabalin, phenytoin, tizanidine, pimozide may be used clinically, but relatively little or no evidence supports their use.
- The use of opioids for pain in this condition is not supported by evidence.

Summary

- For TMD, NSAIDs plus or minus skeletal muscle relaxants is a reasonable initial choice for pain.
- Longer term management of TMD could include botulinum neurotoxin (myofascial), or corticosteroids/hyaluronic acid (joint).
- For TN, the drug of choice remains carbamazepine (oxcarbazepine).
- Alternative or add-on therapy includes baclofen, botulinum neurotoxin, or other neuroleptics.
- No evidence for the use of opioid analgesics in either condition.

Practical Applications — Key Takeaways

- Orofacial pain conditions can be complex
- Do what you can do - eliminate or rule out oral and dental causes to pain
- Diagnosis requires a solid history and a team approach
- Recognize and refer early

NAM Report 2020

- Urgent need to transform dental education to include OFP and TMD
- Improve inter professional education opportunities
- Centers of Excellence to provide care, coordinate research, and provide telehealth

TEMPOROMANDIBULAR DISORDERS

Priorities for Research and Care



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Questions & Answers



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Missed Connections
Providers and Consumers Want More Medical-Dental Integration

Oral health and overall health are inextricably linked. There is mounting evidence to suggest that poor oral health is related to a variety of chronic health conditions, such as high blood pressure, dementia, diabetes, and obesity. Despite this known connection, dental care is still largely siloed from medical care. The Centers for Disease Control and Prevention (CDC) estimates that integrating basic health screenings into a dental setting could save the health care system up to \$100 million every year.¹

CareQuest Institute for Oral Health conducted a nationally representative survey in January and February 2021 to assess consumers' perspectives on oral and overall health (n=5,320). CareQuest Institute also conducted a nationwide survey of oral health providers to assess perspectives and current behaviors related to interprofessional practice (n=377). Consumers and oral health providers described a lack of integration between medical and oral health care, and a desire for increased interprofessional collaboration.

Key Findings:
Medical-dental collaboration is currently uncommon.

- 63% of consumers report that their primary medical doctor "rarely" or "never" asks about their oral health.
- 33% of consumers report that their oral health provider "rarely" or "never" asks about their overall health.
- 45% of responding oral health providers report "rarely" integrating their care with clinicians outside of dentistry, with only 14% reporting it is part of their "daily" practice.
- Less than a third of consumers report receiving general health screenings from their oral health provider.
- A majority (89%) of adults report never receiving a referral from their oral health provider to a non-oral health professional.
- Almost a fourth (24%) of participating oral health providers report currently implementing interprofessional practice.

Webinar Evaluation

Complete the evaluation by **Friday, January 19** to receive CE credit. You will receive a link to the survey within 24 hours.

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How Philanthropy and Community Voice Accelerate Oral Health Systems Change on January 25 at 3—4 p.m. ET.

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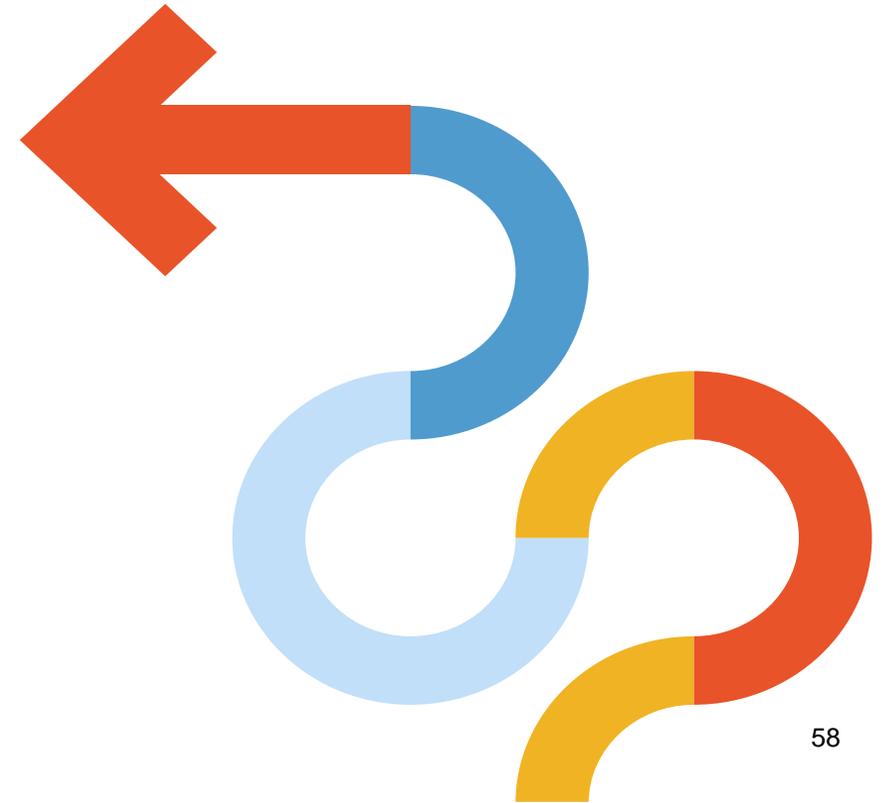
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