

Assessment and Management of Pain in Patients with Intellectual Disability



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Diagnosis of Orofacial Pain



General Population

- Oral mucosal disease/odontogenic pain
- Masticatory muscle pain
- TMD
- Headache disorders
- Neuropathic pain
- Cervicogenic pain
- Combinations of above
- Prevalence of orofacial pain varies between 12% (Lipton) to 25% (Macfarlane)

Patients with Intellectual Disability Developmental Disability

- Obesity /physical inactivity
- Impairments of vision or hearing
- Poor oral health
- Cardiac issues
- Oropharyngeal dysphagia
- Oesophageal reflux
- GIT problems
- Musculoskeletal disorders
- Epilepsy
- Endocrine disorders
- Behavioural problems
- Psychiatric issues
- **Neuropathology**

Pain

An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.

IASP Definition

- *Note:* The inability to communicate verbally does not negate the possibility that an individual is experiencing pain and is in need of appropriate pain-relieving treatment. Pain is always subjective. Each individual learns the application of the word through experiences related to injury in early life. Biologists recognize that those stimuli which cause pain are liable to damage tissue. Accordingly, pain is that experience we associate with actual or potential tissue damage. It is unquestionably a sensation in a part or parts of the body, but it is also always unpleasant and therefore also an emotional experience. Experiences which resemble pain but are not unpleasant, e.g., pricking, should not be called pain. Unpleasant abnormal experiences (dysesthesias) may also be pain but are not necessarily so because, subjectively, they may not have the usual sensory qualities of pain. Many people report pain in the absence of tissue damage or any likely pathophysiological cause; usually this happens for psychological reasons. There is usually no way to distinguish their experience from that due to tissue damage if we take the subjective report. If they regard their experience as pain, and if they report it in the same ways as pain caused by tissue damage, it should be accepted as pain. This definition avoids tying pain to the stimulus. Activity induced in the nociceptor and nociceptive pathways by a noxious stimulus is not pain, which is always a psychological state, even though we may well appreciate that pain most often has a proximate physical cause. IASP

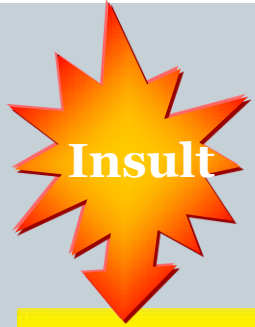
Epidemiology

- Chronic pain is common within the community, but there are few substantial data. Approximately 18% of the population are currently affected by moderate to severe chronic pain.^[1]
- A systematic search of multiple databases found a one-month prevalence of moderate-to-severe non-cancer chronic pain in Europe of 19%.^[2] One study found that short education, poor self-rated health, high body mass index and physical strain at work were predictors of chronic pain.^[3]
- Reid KJ et al. Epidemiology of chronic non-cancer pain in Europe: narrative review of Curr Med Res Opin. 2011 Feb;27(2):449-62. Epub 2011 Jan 3



The Mystery of Pain

‘Definitions Based **on** Clinical Consequences’



**Acute
pain**

**Chronic
pain**

≥3–6 months

- Serves a protective function
- Usually apparent noxious insult
- Provides immediate and intense information about actual or imminent tissue damage.
- It saves us further tissue damage.
- Acute pain is adaptive

Serves no protective function
Degrades: health, function,
immune system
Acute pain meds don't work
Serves no purpose
Mood and behaviour affected
Deterioration of relationships

Pain in People with Intellectual Disability

PURPOSE OF REVIEW:

Pain is a near-universal experience and research suggests that chronic pain, defined as pain lasting longer than 3 months, affects around 20% of the general population. However, there is relatively little awareness of the problem of pain amongst people with an intellectual disability.

RECENT FINDINGS:

Recent prevalence studies indicated that chronic pain affects around 15% of people with an intellectual disability. Although prevalence can be estimated based on third-party reports, there are methodological limitations that suggest this way of detecting pain may be unreliable. Other methods, such as structured behavioural observation, offer a reliable and valid alternative. Once pain has been recognized, however, there has been limited research to evaluate pain management interventions for people with an intellectual disability, especially in the area of self-management.

SUMMARY:

There is good evidence to support behavioural observation methods for recognition of pain in people with limited ability to communicate about their pain. Psychological interventions for pain management are widely used in the general population and may also have a useful role in assisting people with an intellectual disability who are affected by persistent pain. However, there is an ongoing paucity of research in this area.

Pain in people with an intellectual disability. McGuire B, Kennedy S.

Curr Opin in Psychiatry 2013 May;26(3):270-5.

Diagnosing Orofacial Pain

Our Challenge as Clinicians



- Pulpal Pain (Toothache) is most common cause of orofacial pain
- Myofascial Pain is most common cause of extraoral pain
- 81% of patients attending a specialist orofacial center had pain sources outside the trigeminal system but failed to mention them

Turp JC et al. Pain maps from facial pain patients reveal a broad pain geography. J Dent Res 1998; 77: 1465 - 1472

Diagnosing Orofacial Pain

Our Challenge as Clinicians

- Pain History
- Clinical examination
- Imaging
- Special tests



Diagnosing Orofacial Pain

Our Challenge as Clinicians



Information:

Based on observation of the patients behaviour and a review of the family history

Special Tests:

Imaging,
plain x- rays,
blood tests

Knowing what to look for!



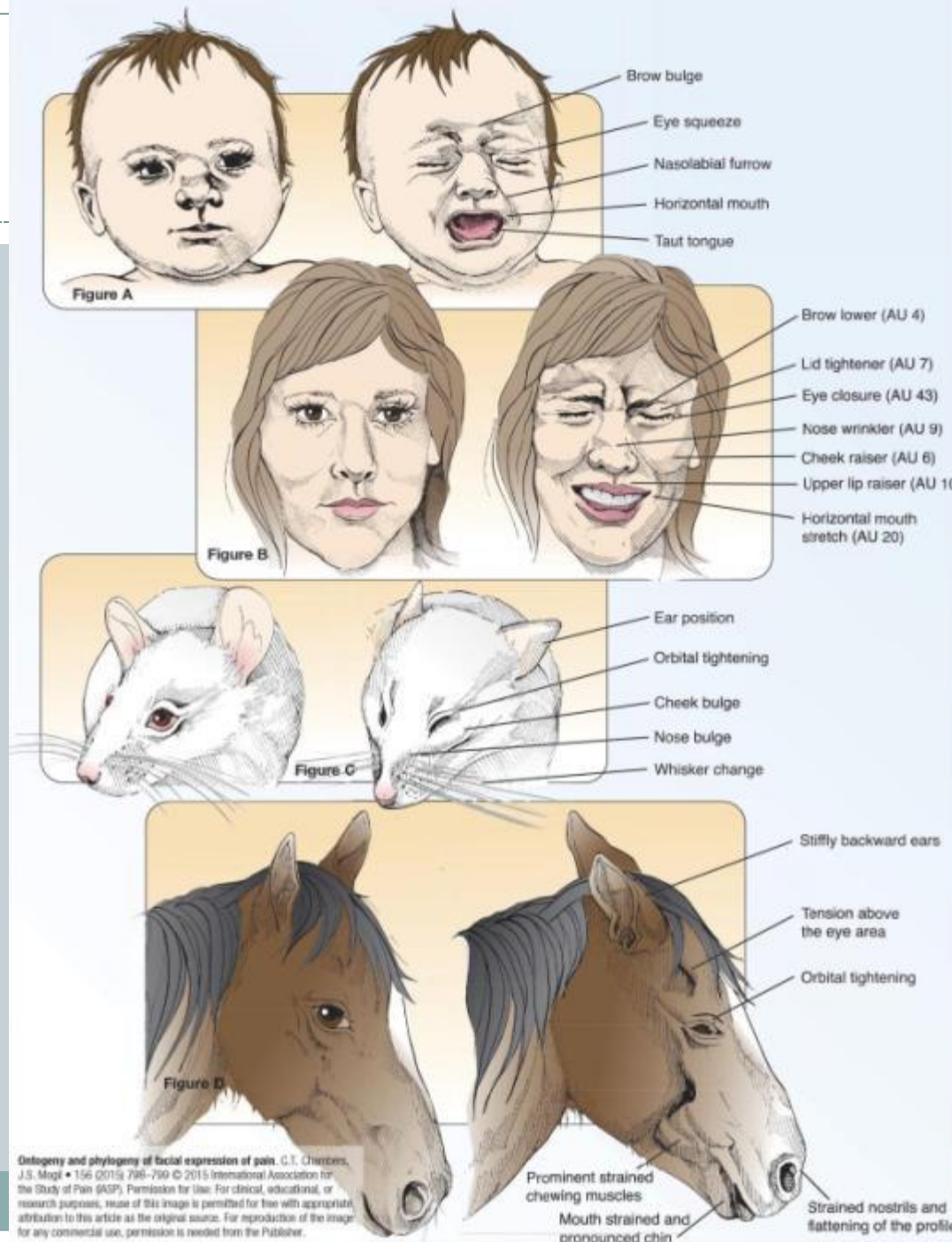
Ontogeny and phylogeny of facial expression of pain

Chambers, Christine T.^a; Mogil, Jeffrey S.^b

PAIN [May 2015 - Volume 156 - Issue 5 - p 798-799](#)

Conclusions:

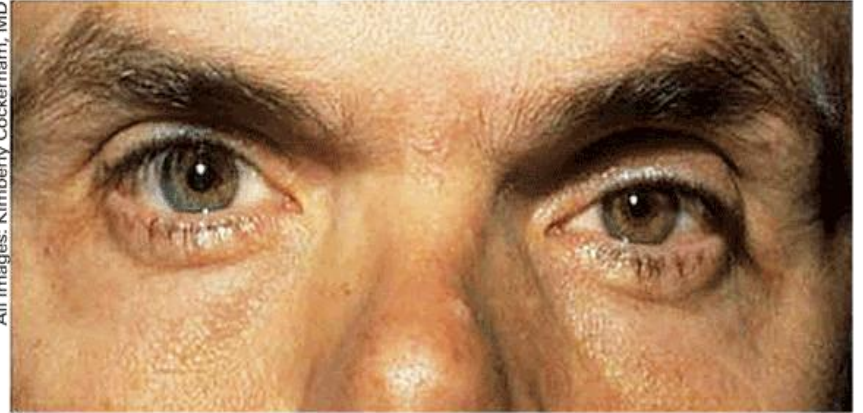
The similarity of facial expression of pain in humans and other animals provides evidence for evolutionary psychological accounts of pain communication¹³ and represents an impressive example of cross-species translation in pain research. There is a movement towards automated computerized measurement of facial expression of pain, which should eliminate some of the time burden currently associated with its use. Clinical pain continues to be undermanaged in both humans and nonhuman animals. We believe that the study and use of facial expression of pain can effectively address both problems.



What Do You See



All images: Kimberly Cockerham, MD



Patient with Horner's syndrome.



What Do You See



The Veterinary Perspective:

Body language

Head down, tail down

Quieter, withdrawn

Pain behaviour, cries, reduced appetite, trembles

In large animal grinding of teeth suggests abdominal

Pain

Pacing,

Whites of eyes shining

Excessive salivation

Vomiting versus regurgitation

Questions:

Change in diet?

Change in accommodation

Access to toxins

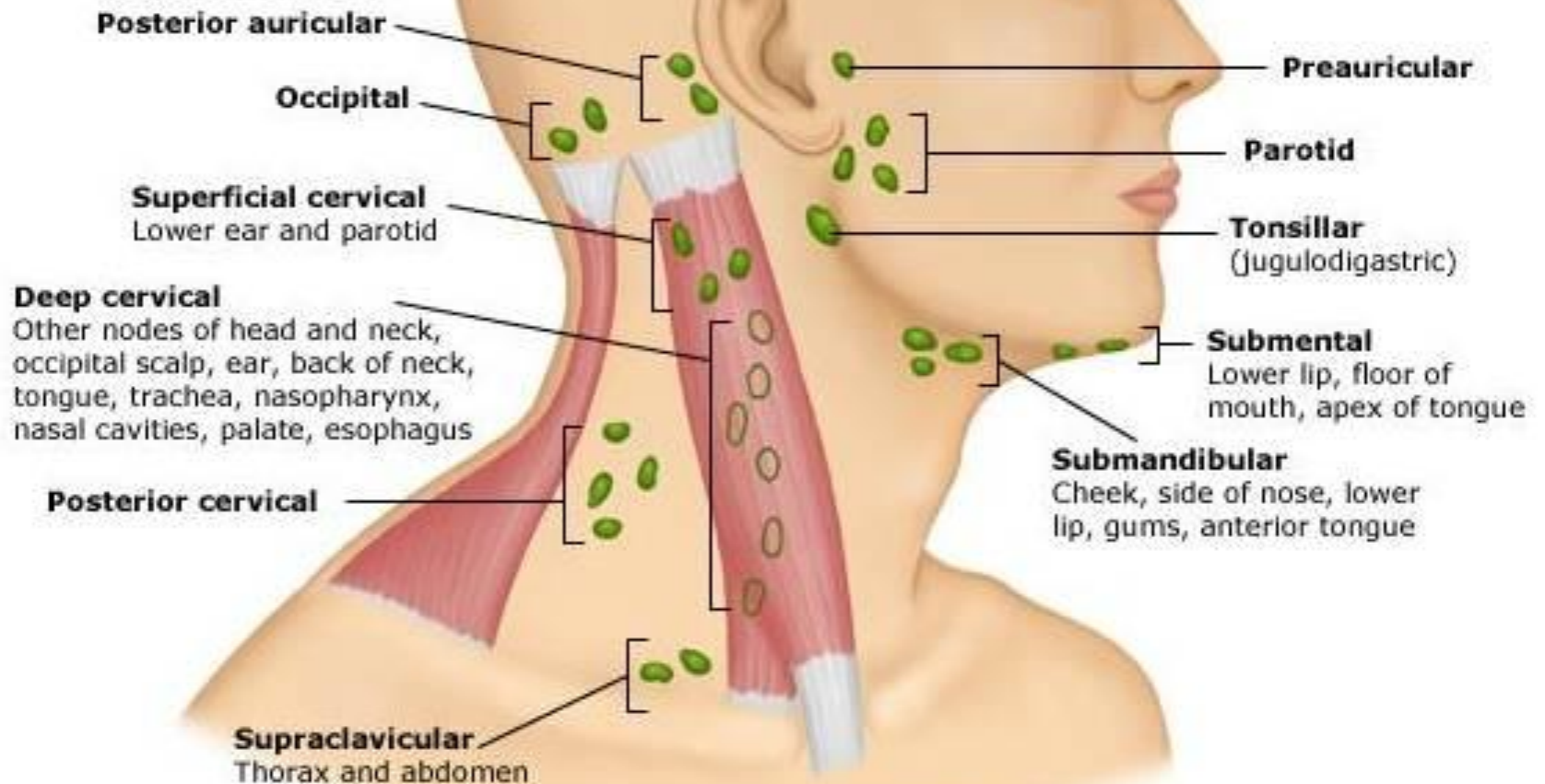


Observation and Examination the Patient

- Face/Neck symmetry and contours
- Cranial nerve assessment
- Ophthalmoscope and auroscope
- TMD assessment
- Neck examination
- Intraoral assessment



Lymph nodes of the head and neck





**GAIN
ADEQUATE
EXPOSURE**

Check for :

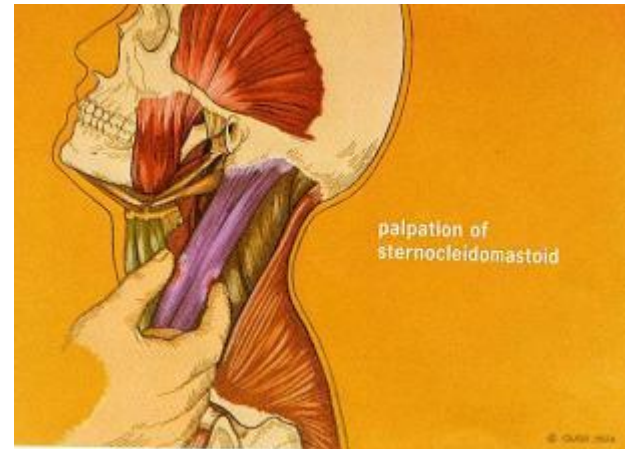
Head alignment or tilt

Lateral Rotation/Flexion

Flexion

Extension

Cervicogenic Pain in Adults

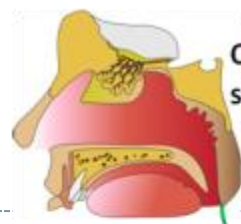


FIBROMYALGIA



*Confirm at least
11 of 18 specified
tender sites*

— sensory fibres
— motor fibres



Olfactory (I)
sensory: nose



Intermediate motor:
submaxillary and sublingual gland
sensory: anterior part of tongue & soft palate



Glossopharyngeal (IX)
motor: pharyngeal musculature
Sensory: posterior part of tongue, tonsil, pharynx



Optic (II)
sensory: eye

Intermediate nerve →

Vestibulocochlear (VII)
sensory: inner ear



vestibular
cochlear

Vagus (X)
motor: heart, lungs, bronchi, gastro-intestinal tract

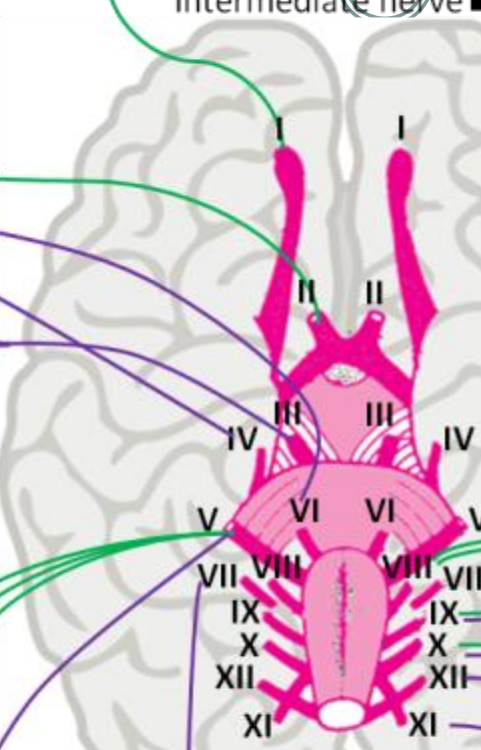
Sensory:
Heart, lungs, bronchi, trachea, larynx, pharynx, gastro-intestinal tract, external ear

Trochlear (IV)
motor: superior oblique muscle

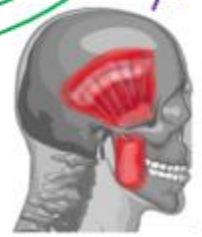


Abducent (VI)
motor: external muscle

Oculomotor (III)
motor: all eye muscles except those supplied by IV and VI



Trigeminal (V)
sensory: face, teeth, sinuses, etc.
motor: muscles of mastication



Facial (VII)
motor: muscles of the face



Hypoglossal (XII)
motor: muscles of the tongue



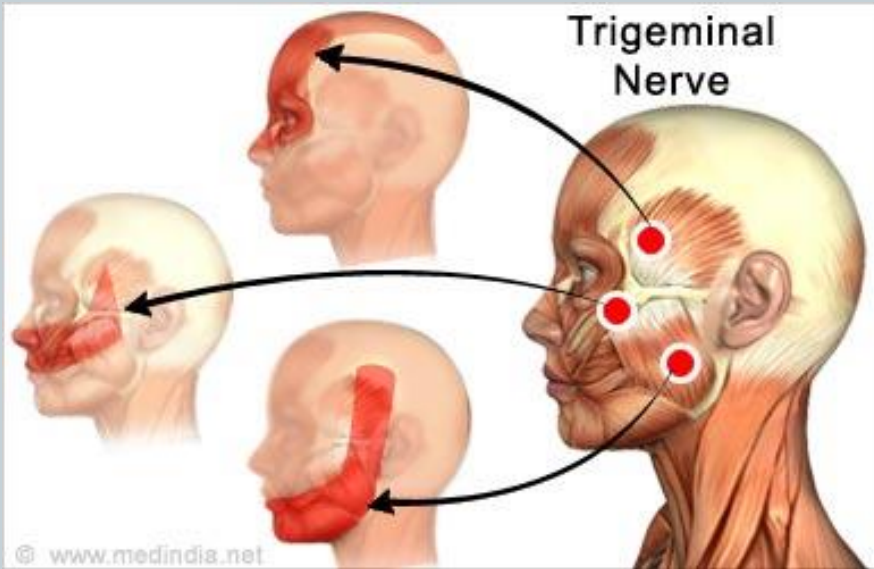
Accessory (XI)
motor:sterno-cleidomastoid and trapezius muscles

TMD Assessment



- What is normal
($<25\text{mm}$ or $>50\text{mm}$)
- Has there been a sudden change in function?
- Are movements painful?
- Are movements voluntary or **involuntary?**
- Is neck movement causing the facial pain?

TMD Assessment



Diagnosis of Headache



Cluster



Pain is often around the eyes and patient may wake up often in the middle of the night.



Tension



Tension headache may be once or few times a week or continuous for a several days.



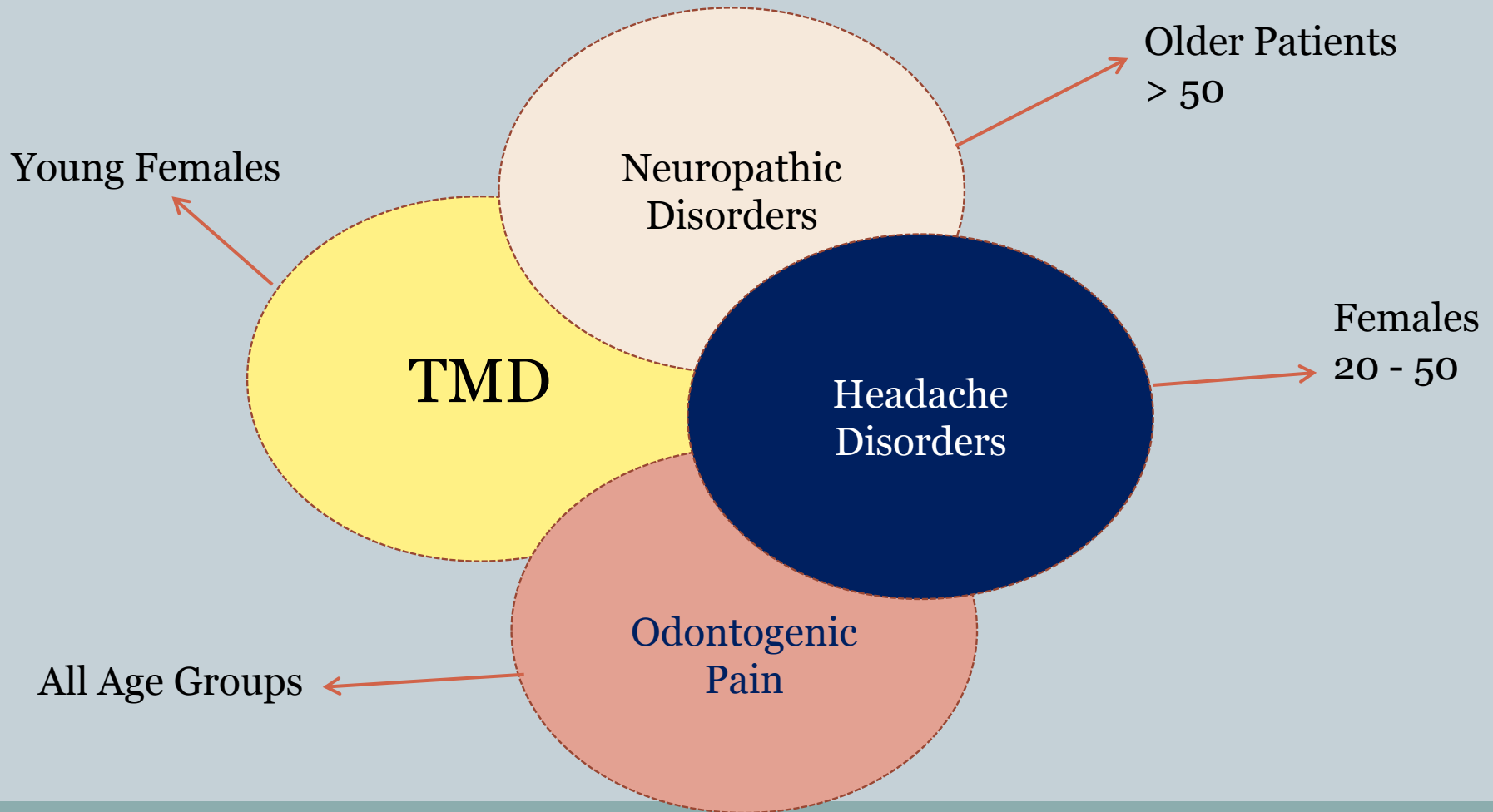
Migraine



Migraine headache is severe intense throbbing pain with pulsating character mostly localized on one side of head.



Most Common Sources of Pain in Orofacial Area



Clinical Case

Emily

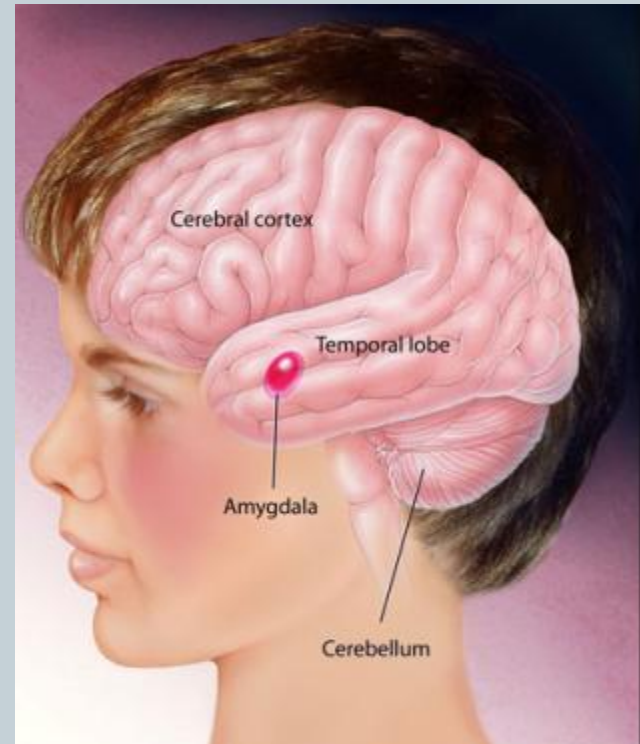
- Age 40
- Two year history of left side facial pain
- Neurofen 8/day and paracetamol 4 – 6 day
- Unilateral nasal discharge
- Episodic dizziness/ nausea
- Poor appetite
- Sleep disruption
- Frequent urination (not consistent)



Clinical Case (Emily)

History:

- Cardiac and GIT problems
- Osteoarthritis
- Poorly controlled hypertension
- She speaks well - but comprehension ?
- Temporal lobe epilepsy and takes lamictal



Clinical Case (Emily)

Clinical Assessment

- Unilateral nasal discharge
- Flushing of skin
- Tenderness of carotid artery
- GON tenderness on left side
- Photosensitive
- Phonosensitive
- Hyperosmia
- Food sensitivity



Clinical Case (Emily)



Diagnosis

- Chronic migraine
- Headache on more than 15 days month
- More than 4 hours day
- Family history of migraine

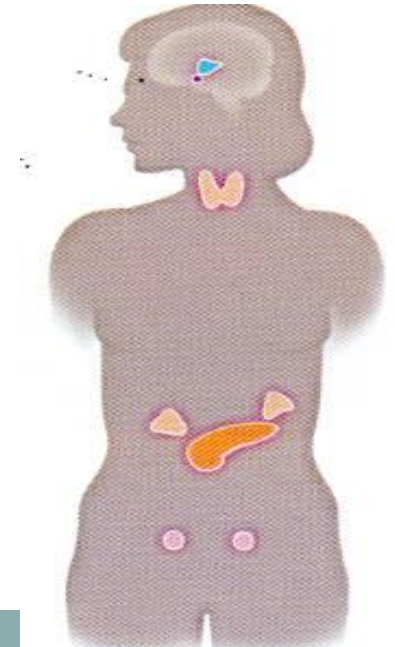
Treatment:

- GON injection
- Lamictal dosage increased
- Routine analgesics withdrawn



The Migraine Patient

The Hypersensitive Brain



Analgesic Rebound Headache

Medication Overuse

One of the most common causes of a [chronic daily headache](#), rebound headaches are caused and perpetuated by patients' too frequent use of short-acting pain medications. If used indiscriminately, the very medications taken to make headaches better can actually make them worse, resulting in the headaches becoming both more frequent and more resistant to treatment. Medication over-use headaches are seen very frequently in headache centers, and are notoriously difficult to treat.

How do rebound headaches begin?

A typical scenario involves a patient with intermittent migraines who discovers a short-acting medication helpful in relieving their pain symptoms. They begin taking the medication more often, and begin to develop more frequent headaches, requiring more doses of the medicine, resulting in still more headaches. Eventually, they become dependent upon the medicine, taking it on a daily basis just in order to “get by. Attempts to stop the medication results in a withdrawal headache that’s even more painful — and the patient is “stuck” in a vicious cycle where the pills that seem to help are the same pills that are causing the problem. If the cycle can be broken, the headaches will substantially improve.

What Is A Sinus Headache

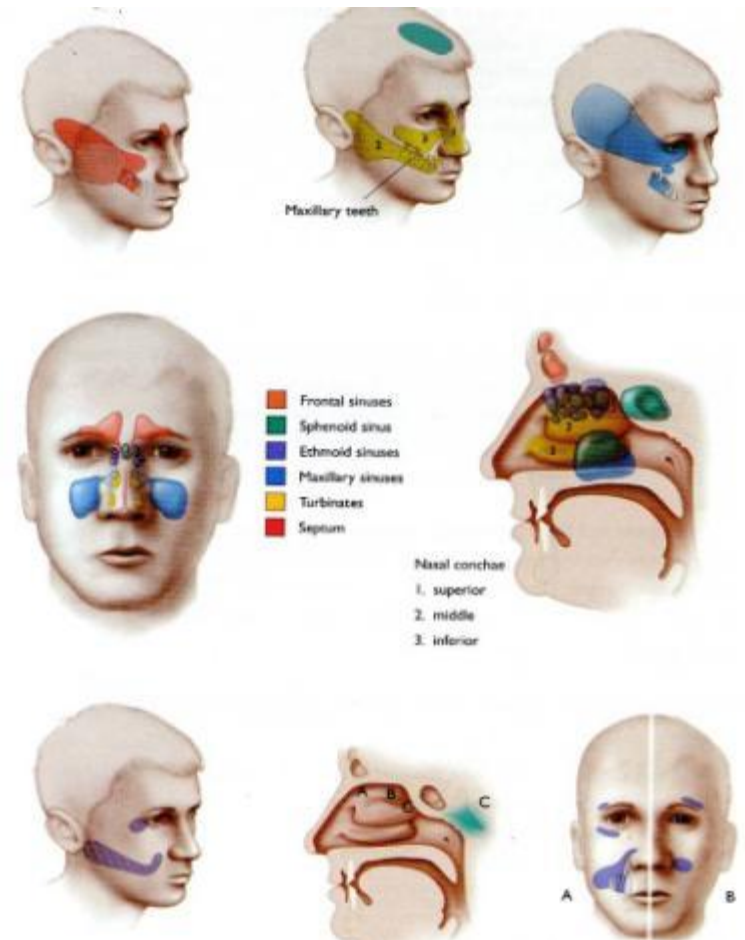


- Many patients (and their physicians) mistakenly believe that their headaches are coming from problems with their sinuses. In actuality - according to a group of otolaryngologists, neurologists, and allergists - sinus headaches are probably quite rare, and usually only associated with **acute** sinus infections. A true sinus infection comes with nasal congestion, discharge, focal pain, and even fever. It will not improve without drainage and antibiotics. Thus, an intermittent headache on the face that gets better with pain relievers or decongestants is probably not at all due to the sinuses.
- Most often, people with “sinus” headaches have normal or nearly normal CT scans of their sinuses, confirming that their pain is due to some other type of headache. Even chronic sinus problems are not thought to be a common cause of intermittent headaches. Over 90% of patients who think they are having sinus headaches are actually experiencing migraines.

Acute Sinus Infection

Constant burning pain with zygomatic and dental tenderness from the inflammation of the maxillary sinus. IASP

- Elevated Temperature
- Purulent Nasal Discharge
- Post Nasal Drip
- Tenderness of Maxillary Sinuses
- Headache
- Malaise
- Lymphadenopathy



Headaches in patients with autism spectrum disorder.

The Journal of Headache and Pain 2014. 15 (Suppl 1) B37

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by persistent deficits in social communication, social interaction and restricted, repetitive patterns of behavior, interests or activities. In general, ASD is associated with pain insensitivity and self-injurious behavior. Support for these associated traits are derived mostly from anecdotal and clinical observations.

A retrospective chart review of patients with ASD who presented in the neurology clinic from January 2011 to April 2013 was performed.

Results

Eighteen patients were identified, 12 males and 6 females. Migraine was the most frequent headache type occurring in up to 61% (11/18) of patients. Eight of these 11 patients have migraine without aura; one with migraine with aura and two patients have both migraine with and without aura. Combined migraine and tension type headache was seen in 3 patients. Three had chronic daily headache and one had probable migraine. Age at presentation ranged from 5-16 years. All patients were verbal and all have co-morbid behavioral and mental health conditions.

Topiramate (TPM): Effects on cognition in patients with epilepsy, migraine headache and obesity

Summer R, et al. *Ther Adv Neurol Disord*. 2013 Jul; 6(4): 211–227.

- TPM is an effective and commonly used AED with documented importance in the treatment of epilepsy, migraine headache, and some psychiatric disorders. In general, TPM is recommended as a safe medication with notable AEs, particularly on cognition [[Faught, 2007](#); [Van Passel et al. 2006](#)]. It is anticipated that use of TPM will increase as the prevalence of obesity increases. TPM is best tolerated when doses are titrated slowly and lowest doses possible are used. The negative cognitive effects induced by TPM often are temporary and resolve after medication discontinuance.
- Patients with **concurrent epilepsy and learning disabilities** may comprise a unique population who do not seem to be at increased risk of AEs from TPM. One study evaluating overall tolerability found that patients were less likely to discontinue the medication if they also had learning difficulties [[Lhatoo et al. 2000](#)].

Derek Has ASD

Presenting Complaints

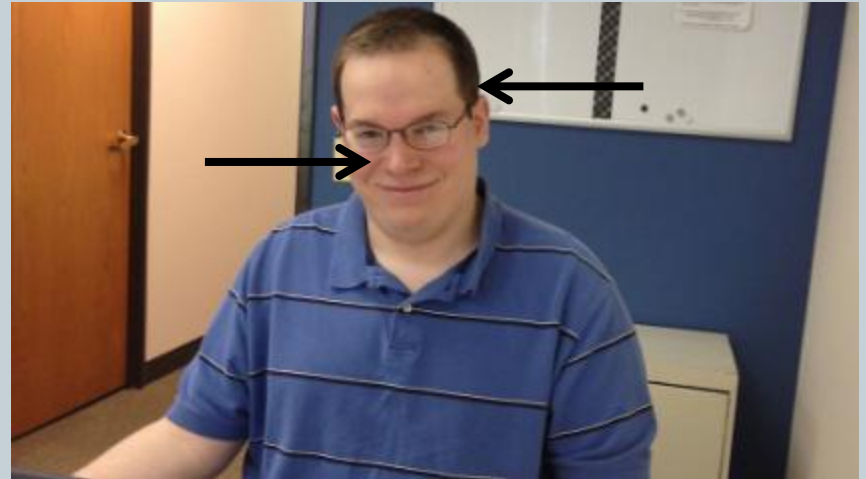
- Circumcranial pain
- Toothache bilaterally in maxilla
- Poor concentration work is affected
- Parents /employers concerned about deterioration in health/performance
- Not sleeping
- Not eating



Derek Has ASD

Clinical Assessment

Assessment of Cervical Spine normal
Localised muscle tenderness in orofacial region
No TM Joint tenderness
Trigger Zone in right infraorbital region
No loss of sensation in orofacial area
Intraoral examination normal
Tenderness in suboccipital areas bilaterally



Derek

Diagnosis and Treatment

- TGN
- Chronic Daily Headache
- Stop dental procedures and investigations
- Prescribed gabapentin
- Stop proprietary analgesics
- Eliminate Caffeine
- Exercise to increase cardiovascular fitness



Trigeminal Neuralgia

http://www.hopkinsmedicine.org/neurology_neurosurgery

Clinical Characteristics of TGN

View this video to learn more!



The screenshot shows a webpage from Johns Hopkins Medicine. At the top left is the Johns Hopkins logo, a yellow triangle with a blue bell. To its right, the text "JOHNS HOPKINS MEDICINE" is displayed in blue. Below this is a blue navigation bar with "JOHNS HOPKINS MEDICINE" on the left, "Health Services" in the center, and "Click Here for Evaluation Types" on the right. The main content area has a white background with the title "Trigeminal Neuralgia" in bold. Below the title is a bulleted list: "• lancinating pain lasting a few seconds", "• Often triggered by sensory stimuli such as cold wind, talking, chewing, drinking", and "• Usually on one side". To the right of the text is a video player showing a man speaking. Below the video is a small image of a hand holding a green leafy plant. At the bottom right, there is a small text box with the heading "Trigeminal Neuralgia" and some illegible text.

Brigid



History of Chief Complaint

- 22 years old, hypertensive, diabetic
- Left side facial pain for six months
- Located in lower left chin, lip, and in front of ear
- Persistent pain since extraction of lower left 8
- Discomfort eating
- Volatile mood
- Constantly rubbing left chin and lip with left hand



Brigid



Clinical Assessment

- Sensory testing of face identifies hyperalgesia and allodynia of left chin and lip
- Sensory testing of tongue normal
- Good ROM but left TM joint is extremely tender in comparison to right side



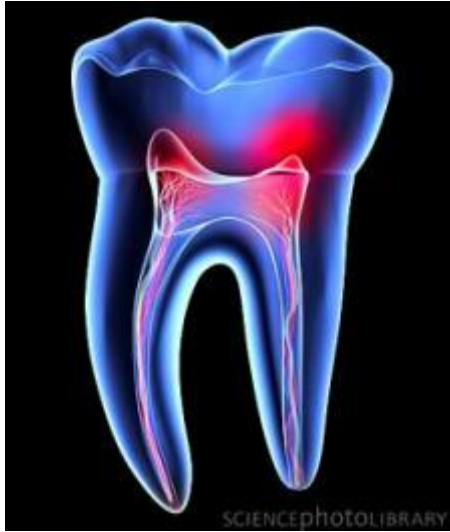
Brigid

Diagnosis and Treatment

- Chronic capsulitis of left TM joint
- Post traumatic trigeminal neuropathic pain in left chin and lip
- Steroid injection (40mg depomedrone and plain local) left joint
- Prescribed gabapentin 300 tds for neuropathic pain



In Making Your Diagnosis Try to Differentiate Between Different Types of Pain



Nociceptive pain
Pain caused by
an inflammatory or
non-inflammatory
response to a
noxious stimulus

Neuropathic pain
Pain initiated or
caused
by a primary lesion
or dysfunction in the
peripheral or central
nervous system

*Examining the relationship between pulpal pain,
headache and trigeminal neuropathic pain!*

Wiegelt A, Terekhin P, Dorfler A, Forster C.

'The representation of experimental tooth pain from upper and lower jaws in the human trigeminal pathway'

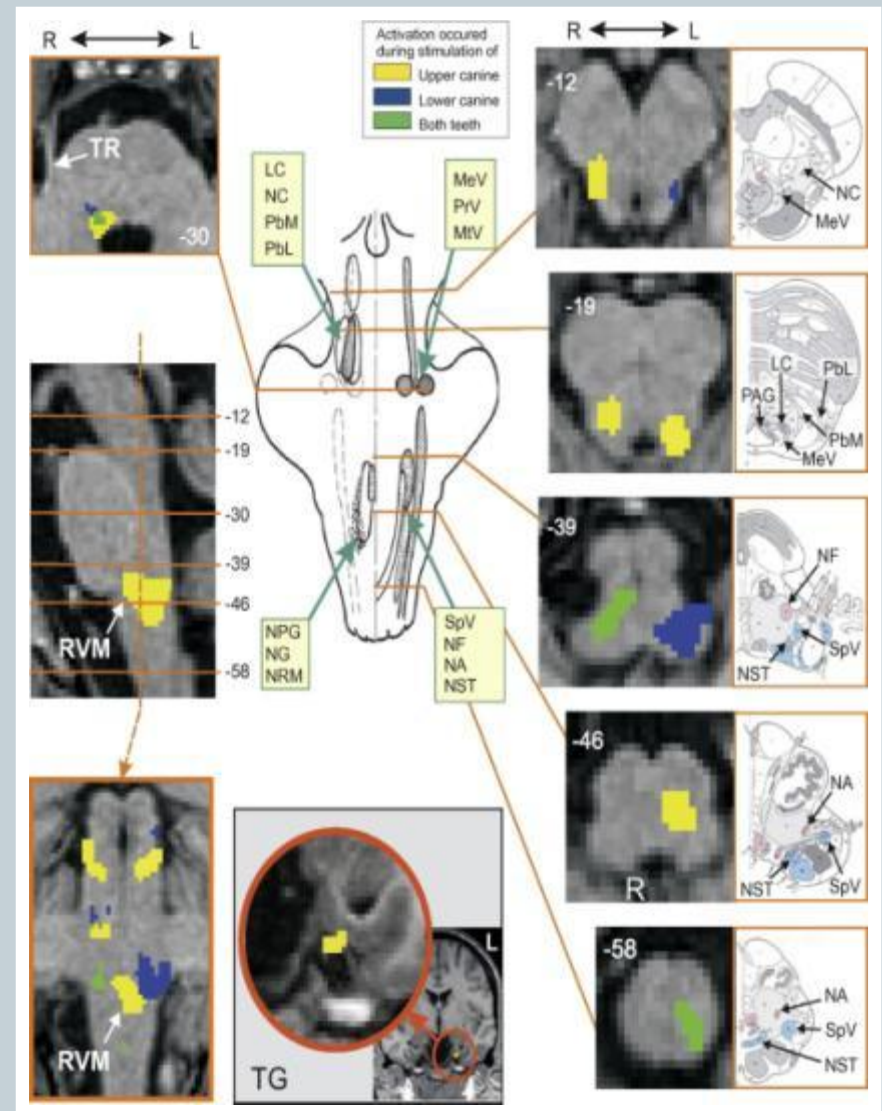
PAIN [Volume 149, Issue 3](#) , Pages 529-538, June 2010

Differences in the activation between

- Non-painful dental stimulation
- Chronic orofacial pain and
- Acute dental pain

Single Inflamed tooth can

- Active a broad area of trigeminal innervation
- Trigger sensory – motor dysfunction
- Activates both medial and lateral pain projection systems
- Majority of areas activated showed no difference between upper or lower tooth activation



Clinical Tips



- If patient is known to be pain sensitive be prepared for problems post op.
- In patients with chronic pain the fault generally lies with the body's ability to switch off pain
- Think 'outside the box' when trying to switch off pain
- Drugs might make the patient feel better but may not switch off the pain mechanism