Don’t Let 2021 Give You a Headache!

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Barrow Neurological Institute

Phoenix, AZ

Disclosures

- Impel NeuroPharma – Advisory Board
- Eli Lilly and Company – Advisory Board
- AbbVie Inc. - Speaker

Objectives

- Differentiate migraine versus headache.
- Review the ICHD-3 diagnostic criteria for migraine with and without aura.
- Identify appropriate migraine prevention and rescue treatment options.
- Review procedural treatment options for migraine and headache disorders.

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Outline

- Epidemiology
- Primary Headache Disorders
  - Migraine
    - Update on Treatment
  - Tension Type
  - Trigeminal Autonomic Cephalgias (TACs)
  - Other: Hypnic headache
- Secondary Headache Disorders
  - Thunderclap headache
  - Pressure: High and Low
- Other Head Pain Syndromes: trigeminal neuralgia, occipital neuralgia, temporal arteritis, RCVS, dissection

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Epidemiology

- Globally, **3rd** most common disease and **2nd** most disabling disease
- **1 in 4** U.S. households has someone with migraine
- In 2016, direct and indirect annual cost of migraine was $36 billion

Steiner et al. J Headache Pain. 2018; 19 (1):17

Bonafede et al. (Headache, June 2018). Costs Associated with Migraine in the United States.

Levin, Morris. (2008). Comprehensive Review of Headache Medicine.

What is a migraine? What is a headache?

Migraine	Headache
Moderate to severe	Mild to moderate
Throbbing/pulsating	Dull/ache
Usually unilateral	Mostly bilateral
Associated symptoms:	Little to no associated symptoms
- Nausea	
- Vomiting	
- Photophobia	
- Phonophobia	
Episodic = <15 migraine days per month	
Chronic = >15 migraine days per month	

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Question #1

34 year old female with pain on both sides of her forehead, occurring every other month for the past 2 years, lasting 6 hours, triggered by stress. She grades the pain as 6-7/10 and she has missed work a few times per year and wasn't able to do activities at home. She doesn't vomit, but feels nauseated, preventing her from eating. She denies any warning prior to the head pain.

What is the diagnosis?

A. Migraine with aura
B. Migraine without aura
C. Tension type headache
D. Cluster headache

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34 year old female with pain on ~~both sides of her forehead~~, occurring every other month (6 per year), lasting 6 hours, triggered by ~~stress~~. She grades the pain as 6-7/10 (moderate) and she has missed work a few times per year (disability) and wasn't able to do activities at home. She doesn't vomit, but feels nauseated, preventing her from eating. She denies any warning prior to the head pain.

What is the diagnosis?

A. Migraine with aura
B. **Migraine without aura**
C. Tension type headache
D. Cluster headache

- ✓ At least **five** attacks fulfilling criteria B-D
- ✓ Headache attacks lasting **4-72 hr** (untreated or unsuccessfully treated)
- ✓ Headache has at least **two** of the following four characteristics:
  - unilateral location
  - pulsating quality
  - ✓ moderate or severe pain intensity
  - ✓ aggravation by or causing avoidance of routine physical activity
- ✓ During headache at least **one** of the following:
  - ✓ nausea and/or vomiting
  - photophobia **and** phonophobia

Bottom line: Most headaches are migraines, until proven otherwise!

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Diagnostic criteria - Migraine without aura

- At least **five** attacks fulfilling criteria B-D
- Headache attacks lasting **4-72 hr** (untreated or unsuccessfully treated)
- Headache has at least **two** of the following four characteristics:
  - unilateral location
  - pulsating quality
  - moderate or severe pain intensity
  - aggravation by or causing avoidance of routine physical activity
- During headache at least **one** of the following:
  - nausea and/or vomiting
  - photophobia **and** phonophobia
- Not better accounted for by another ICHD-3 diagnosis.

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Diagnostic criteria - Migraine with aura

- A. At least **two** attacks fulfilling criteria B and C
- B. One or more of the following fully reversible aura symptoms:
  - visual
  - sensory
  - speech and/or language
  - motor
  - brainstem
  - retinal
- C. At least **three** of the following six characteristics:
  - at least one aura symptom spreads gradually over ≥5 minutes
  - 2 or more aura symptoms occur in succession
  - each individual aura symptom lasts 5-60 minutes
  - at least one aura symptom is unilateral
  - at least one aura symptom is positive
  - the aura is accompanied, or followed within 60 minutes, by headache
- D. Not better accounted for by another ICHD-3 diagnosis.

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Only have a few minutes?

<u>3 main questions:</u>

1. Photophobia – 74% specificity
2. Nausea – 81% specificity
3. Disability in the last 3 months – 52% specificity

- If they have 2 or 3 signs → **75% chance its migraine**
- With only 1 positive sign → probability of migraine is estimated at 23%.

Lipton RB, Dodick D, Sadovsky R, Kolodner K, Endicott J, Hettiarachchi J, Harrison W; ID Migraine validation study. A self-administered screener for migraine in primary care: The ID Migraine validation study. Neurology. 2003 Aug 12;61(3):375-82.
Cousins G, Hijazze S, Van de Laar FA, Fahey T. Diagnostic accuracy of the ID Migraine: a systematic review and meta-analysis. Headache. 2011 Jul-Aug;51(7):1140-8. doi: 10.1111/j.1526-4610.2011.01916.x. Epub 2011 Jun 7.

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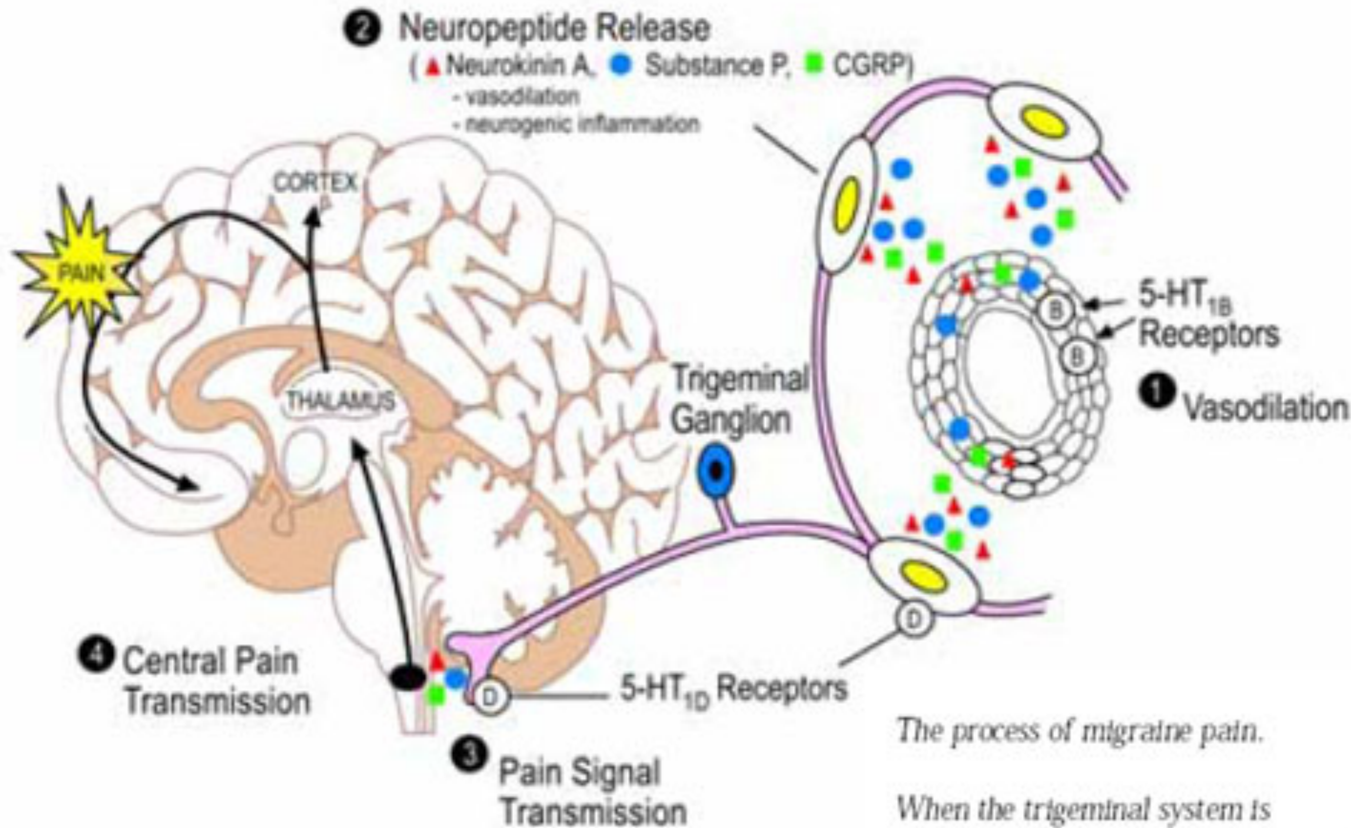
Migraine Pathophysiology



The process of migraine pain.

When the trigeminal system is activated (1), peptides are released (2) prompting an inflammatory reaction. This increases flow of sensory traffic through the brain stem (3), the thalamus and ultimately the cortex (4).

Medscape.com

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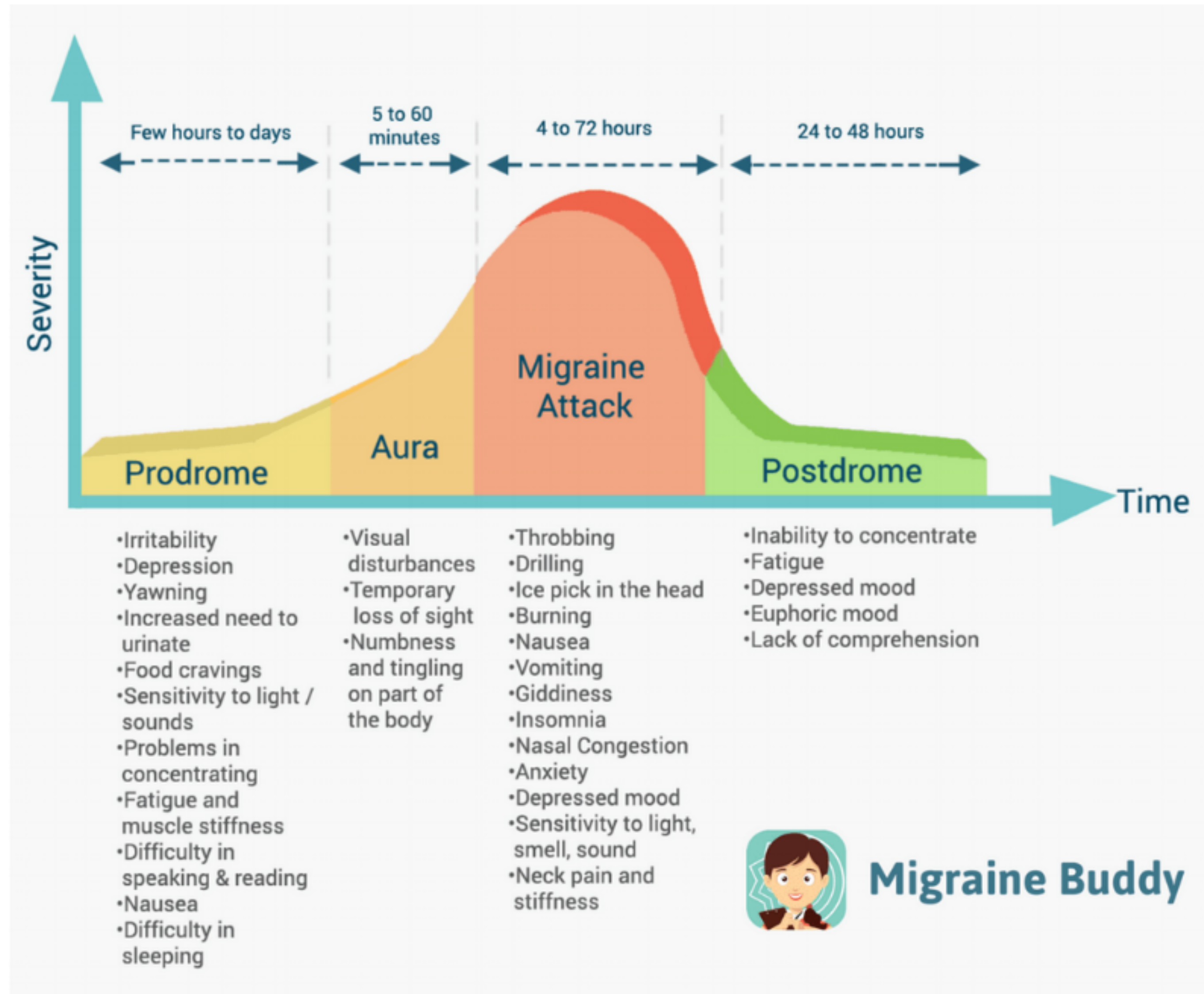
4 Phases of Migraine



https://www.google.com/url?sa=i&url=https%3A%2F%2Fmigrainebuddy.com%2Fmigraine%2Fmigrainesymptoms-the-stages-of-a-migraine&psig=AOvVaw0Ez5FiCS-ZsxtCXPy7oHaz&ust=1613430849715000&source=images&cd=vfe&ved=0CAMQjB1qFwoTCKjZxbrA6u4CFQAAAAAdAAAAABAD

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Migraine Treatment

Prevention and Abortive

Abortive Treatment 1st line - Triptans

- Contraindications
    - Coronary artery disease
    - History of stroke
    - Uncontrolled HTN
- Caution in hemiplegic and basilar due to risk of stroke
- Mechanism: serotonin receptor agonists (5- $HT_{1B/D}$)→ vasoconstriction
- <10 days a month → MOH
    - Max script should be #9 per 30 day supply

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Generic	Almotriptan	Eletriptan	Frovatriptan	Naratriptan	Rizatriptan	Sumatriptan	Zolmitriptan
Brand	Axert	Relpax	Frova	Amerge	Maxalt	Imitrex	Zomig
Route	PO	PO	PO	PO	PO, ODT	PO, IN, SC	PO, IN
Dose	6.25, 12.5 mg	20, 40 mg	2.5 mg	1, 2.5 mg	5, 10 mg	PO: 25, 50, 100 mg IN: 5, 20 mg per 0.1 mL SC: 3, 4, 6 mg	PO, IN: 2.5, 5 mg
Onset	30-60 min	30-60 min	~2 hrs	1-3 hrs	30-60 min	PO: 30-60 min SC: 10 min IN: 10-15 min	PO: 30-60 min IN: 10-15 min
Half-life	3-4 hrs	~4hrs	~25 hrs	~6 hrs	~2-3hrs	~2hrs	~2-3hrs

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Basics about Migraine Abortives

- ONSET of headache
- Adequate dose
- Goal: completely resolve headache
- REPEAT triptan in 2 hours
  - Rizatriptan gets 3 doses per day, 2 for all other triptans
- Allergies are rare – try another triptan

- Don't forget about a prophylactic
- YOU can cause medication overuse headache

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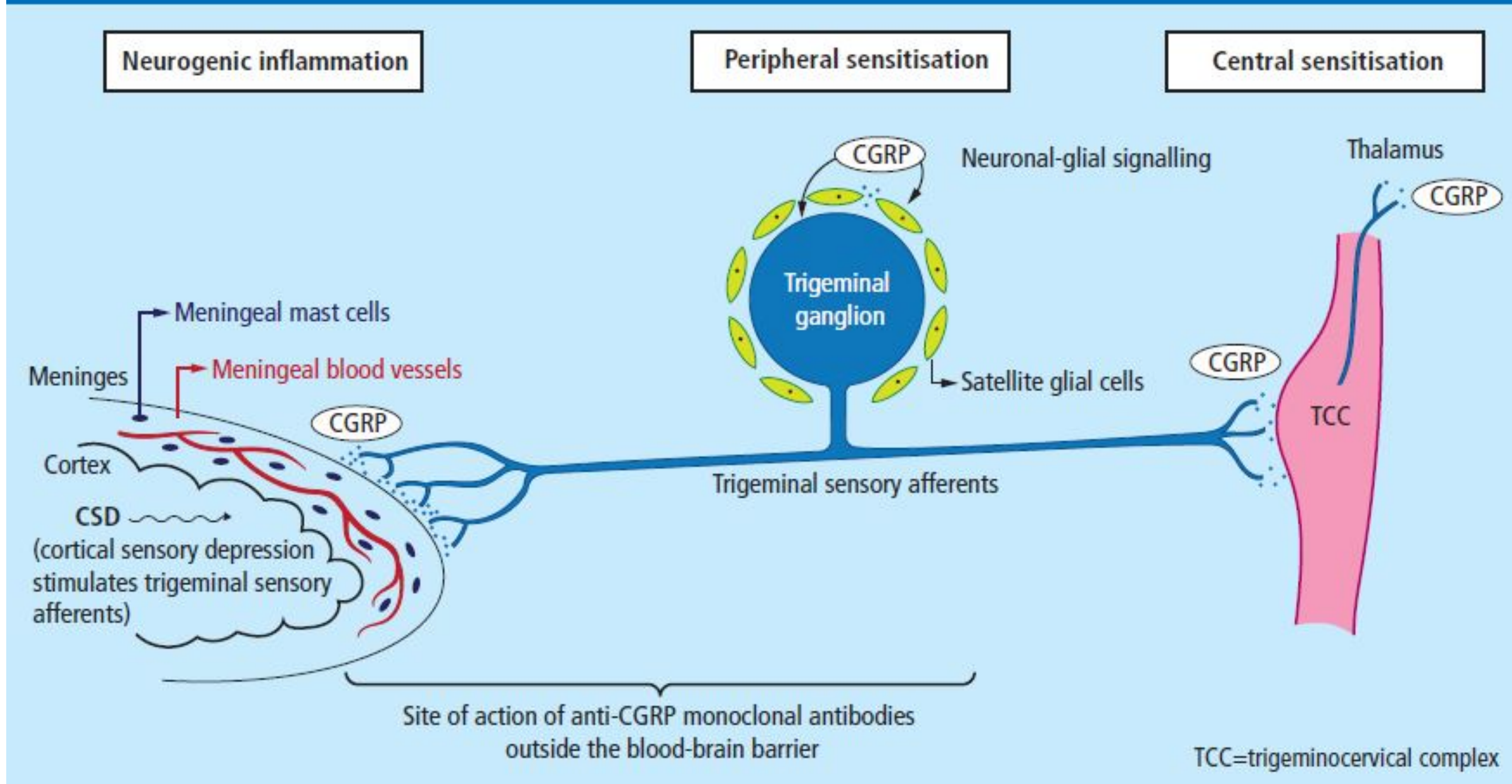
Calcitonin Gene Related Peptide (CGRP)



Anti-CGRP monoclonal antibodies: breakthrough in migraine therapeutics
RATNA KRISHNASWAMY, et al. Progress in Neurology and Psychiatry. AUGUST 7, 2019 VOLUME 23.03 JULY-SEPTEMBER 2019

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Annals of NEUROLOGY
An Official Journal of the American Neurological Association and the Child Neurology Society
ANA AMERICAN NEUROLOGICAL ASSOCIATION

Brief Communication

Release of vasoactive peptides in the extracerebral circulation of humans and the cat during activation of the trigeminovascular system

Dr. P. J. Goadsby MBBS, PhD, L. Edvinsson MD, PhD, R. Ekman MD

First published: February 1988 | https://doi.org/10.1002/ana.410230214 | Cited by: 472

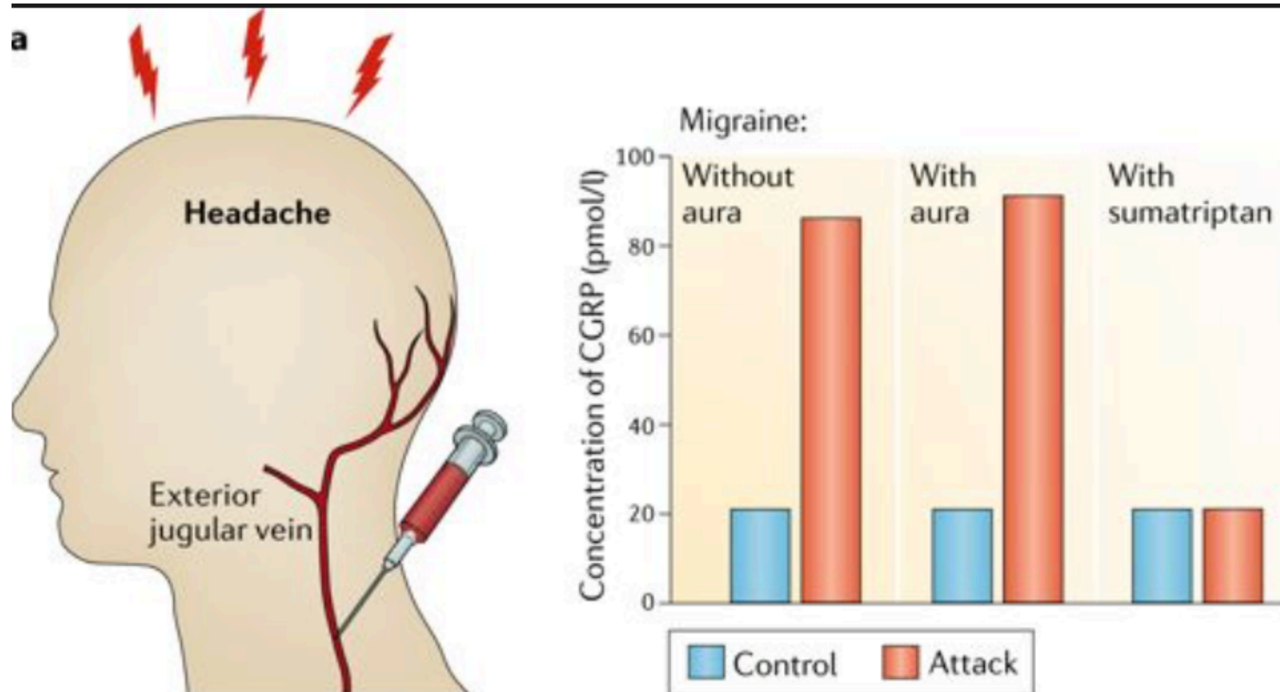
nature REVIEWS NEUROLOGY

Review Article | Published: 24 April 2018

CGRP as the target of new migraine therapies — successful translation from bench to clinic

Lars Edvinsson, Kristian Agmund Haanes, Karin Warfvinge & Diana N. Krause

Nature Reviews Neurology **14**, 338–350 (2018) | Download Citation



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Abortive Treatment – Non-triptans

- Migraine At-Home "cocktail" (Protocol)
  - Analgesics – can be used in combination, but <10x/month
  - Magnesium 400-600 mg
  - Anti-emetics
    - Ondansetron 8 mg ODT
    - Promethazine 25 mg
  - Diphenhydramine 25 mg
  - Hydration and dark quiet room

- Alternatives
  - Midrin – compounded
  - Hydroxyzine 25 mg
  - Diclofenac
  - Butalbital <5-10x/month
  - Now, we can more choices!!

Fancy, New Meds

Gepants - small molecule CGRP antagonist

- Ubrogepant (Ubrelvy®)–50 mg and 100 mg PO (max 200 mg/24hr)
  - 61% of patients had pain relief within 2 hours
  - SE: nausea, somnolence
  - No cardiovascular or medication overuse risk
  - Drug interactions –CYP3A4 inhibitors

- Rimegepant (Nurtec™)
  - 75 mg ODT (1 dose/24hr)
  - 59% of patients had pain relief within 2 hours
  - SE: nausea
  - Drug interactions – CYP3A34
  - No cardiovascular or medication overuse risk

Ubrelvy.com, Nurtec.com, biohavenpharma.com

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Fancy, New Meds

- **Ditans** – 5HT1F agonist
  - Lasmiditan (Reyvow®)
    - 50 mg, 100 mg, and 200 mg (1 dose/24 hr)
    - 54-61% of patients had pain relief within 2 hours
    - Schedule 5
    - Cannot drive for 8 hours
    - SE: dizziness, somnolence, paresthesias

Reyvow.com

Migraine Prevention

- >3-4 migraines a month OR >8 migraine days a month

- Goals [1]
  - ↓ attack frequency, intensity, and duration
  - ↑ responsiveness to acute therapy
  - ↑ function and ↓ disability
  - Prevent occurrence of MOH and chronic daily headaches

- AMPP study [2]
  - N = 162,576, study mailed out
  - In our survey, 43.3% had **never** used a migraine preventive treatment

1 Silberstein SD, et al. (2012a) Evidence-based guideline update: pharmacologic treatment for episodic migraine prevention in adults. Neurology 78)

2 **Migraine prevalence, disease burden, and the need for preventive therapy** R. B. Lipton, M. E. Bigal, M. Diamond, F. Freitag, M. L. Reed, W. F.Stewart Neurology Jan 2007, 68 (5) 343-349

Medication	Daily Dose[a]	American Academy of Neurology Evidence Level for Efficacy[29–31,b,c]	Canadian Headache Society Recommendation[27,d]	Canadian Headache Society Evidence Level for Efficacy[27,d]
Metoprolol	100–200 mg	A	Strong	High
Propranolol	80–240 mg	A	Strong	High
Topiramate	50–200 mg	A	Strong	High
Amitriptyline	10–200 mg	B	Strong	High
Timolol	20–60 mg	A	N/A	N/A
Nadolol	20–160 mg	B	Strong	Moderate
Divalproex sodium/ sodium valproate	500–2000 mg	A	Weak	High
Venlafaxine	75–225 mg	B	Weak	Low
Atenolol	50–200 mg	B	N/A	N/A
Gabapentin[e]	600–3600 mg	U	Strong	Moderate
Candesartan[f]	16–32 mg	C	Strong	Moderate
Lisinopril	10–40 mg	C	Weak	Low
Flunarizine[g]	5–10 mg	N/A	Weak	High
Pizotifen[g]	1.5–4 mg	N/A	Weak	High
Verapamil	120–480 mg	U	Weak	Low
OnabotulinumtoxinA (chronic migraine only)	155 units every 12 weeks	A	N/A	N/A
Erenumab[h]	70 mg or 140 mg each month	N/A	N/A	N/A

CONTINUUM (MINNEAP MINN) 2018;24(4, HEADACHE):1052–1065.

How to choose?

1. Co-morbidities
   - Ex: insomnia or depression → amitriptyline
   - Ex: HTN → propranolol or verapamil
   - Ex: obesity → topiramate
2. Dosing/Compliance
   - First time on any medication → start qhs
3. Side effects
   - Cognitive decline → avoid topiramate
   - Obesity → avoid depakote
   - Hypotension/history of syncope → avoid BB and CCB

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Question #2

Monthly CGRP monoclonal antibodies are used only for chronic migraine.

A. True

B. False

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Question #2

Monthly CGRP monoclonal antibodies are used only for chronic migraine.

A. True

B. **False – used for episodic and chronic migraine prevention**

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Erenumab (Aimovig®)

- **CGRP antibody receptor antagonist**
- Efficacy
  - EM: 3-4 fewer migraine days/month
  - CM: 7 fewer migraine days/month
- Dosing
  - Two doses: 70 mg and 140mg monthly
  - Autoinjector
- Side effects:
  - Site reaction (5-6%)
  - Constipation (1-3%)
  - Cramps/spasms (<1%)
  - Added post-market: hypertension
- Half-life: 28 days

https://www.aimovighcp.com/efficacy

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Fremanezumab (AJOVY®)

- **CGRP antibody ligand antagonist**
- Efficacy
  - EM: 3.5 few migraine days/month
  - CM: 5 fewer migraine days/month
- Dosing:
  - 225 mg/1.5 mL monthly or 3 injections quarterly
  - Pre-filled syringe or autoinjector
- Side effects:
  - Injection site reaction (>5%)
- Half-life: 31 days

https://www.ajovyhcp.com/support/administering

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Galcanezumab (Emgality®)

- **CGRP antibody ligand antagonist**
- Efficacy:
  - EM: 4.7 fewer migraine days/month
  - CM: 4.8 fewer migraine days/month
- Dosing:
  - Month 1(loading): two 120 mg injections
  - Month 2+ : one 120 mg injection
  - Prefilled syringe or autoinjector
- Side effects:
  - Site reaction (2%)

- Half life: 27 days

- Other indication: episodic cluster headache abortive (300 mg)

https://www.fiercepharma.com/pharma/emgality-s-powering-ahead-complementing-other-new-launches-at-lilly

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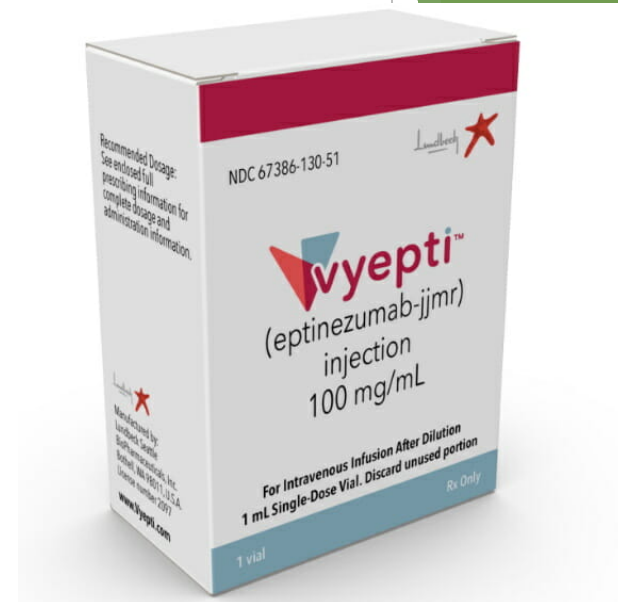
Eptinezumab (VYEPTI™)

- Dosing:
  - 100 mg or 300 mg IV (30 minutes)
  - every 3 months
- Efficacy:
  - EM: 12 fewer migraine days/3 months
  - CM: 23 fewer migraine days/3 months
- Side effects:
  - 6% nasopharyngitis
  - 1% hypersensitivity
- Half life: 27 days



https://www.empr.com/drug/vyepti/

VYEPTI (eptinezumab-jjmr) [package insert]. Bothell, WA: Lundbeck Seattle BioPharmaceuticals, Inc.
Lipton RB, Goadsby PJ, Smith J, et al. Efficacy and safety of eptinezumab in patients with chronic migraine: PROMISE-2. *Neurology*. 2020;94(13):e1365-e1377.

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Medication Overuse Headache (MOH)

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Medication Overuse Headache

- Headache present on >15 days/month.
- Regular overuse for >3 months
- Headache has developed or markedly worsened during medication overuse.

- OTC analgesics – **15x/month**
- Triptans, opioids, or combinations – **10x/month**

- Ask about CAFFEINE!
- **YOU CAN PREVENT THIS!**

https://westlondonwisdom23.wordpress.com/tag/evil-twin/

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The “F” word (Fioricet)

- **10x/month - All scripts should be under #15**
- Barbiturates → tolerance, dependence, and toxicity
- The American Academy of Neurology (AAN), the American Headache Society, and the American Board of Internal Medicine recommend avoiding its use as a **first-line agent** for the treatment of headaches
- Caffeine can also cause medication overuse
- Only indicated if patient has contraindications to triptans (CAD or stroke)

Lodor E, Weizenbaum E, Frishberg B, Silberstein S. Choosing wisely in headache medicine: the American Headache Society's list of five things physicians and patients should question. *Headache*. 2013;53(10):1651-1659.

Silberstein SD, McCrory DC; Headache 41 (10): 953-67 (2001)

https://www.bestmoviesbyfarr.com/articles/did-judy-garland/2014/06

https://www.rottentomatoes.com/celebrity/marilyn_monroe

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Solution!

- IM “cocktail” in office
- Start preventative medication!
- Give them alternative option
  - Ex: Diclofenac, CGRP, ditans
- Nerve blocks
- Break the cycle → Medrol dose pack
- Encouragement and frequent visits
- Headache journal
- ↓ caffeine

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Status Migrainosus

- IM injection in the office (3x/month max)
  - Ketorolac 30 mg
  - Dexamethasone 4 mg
  - Ondansetron 4 mg OR promethazine 25 mg (if driver available)

OR

- At-home Cocktail (AVOID ER and Urgent Care visits)
  - IM or PO ketorolac 10 mg, dexamethasone 4 mg
  - PO ondansetron or promethazine
  - PO diphenhydramine 25 mg
  - PO acetaminophen 500 mg or ibuprofen 600 mg (>10x/month)
  - PO magnesium 500 mg
  - 1 bottle of water

OR

- Medrol dose pack – limit due to risk of wt gain and osteoporosis

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IV Migraine Cocktail

- Ketorolac 30-60 mg
- Dexamethasone 4 mg
- Diphenhydramine 25-50 mg
- Promethazine 25-50 mg
  - Or prochlorperazine 5-10 mg
  - Or metoclopramide 10 mg
- Depakote 500 mg **PUSH 2-5 min**
- Magnesium 1-2 g

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Dihydroergotamine (DHE)

- EKG, CMP
- Pre-treat with Reglan and Benadryl
- Dosing: 0.5 mg test dose if naïve then 1 mg q8h
  - Max: 11 mg
- If side effects, slow rate of infusion, rather than decreasing dose

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Tension Type

- Make sure its not a migraine or medication overuse
- Common triggers – stress, anxiety, diet, sleep, posture
- Bilateral temporal and frontal, dull ache, mild to moderate
- Little to no associated symptoms

TREATMENT

- OTCs <10x/month
- Physical therapy
- Meditation, relaxation
- Essential oils
- Assess underlying cause

Trigeminal Autonomic Cephalgias (TACs)

www.theatlantic.com/health/archive/2013/11/cluster-headaches-the-worst-possible-pain/281524/

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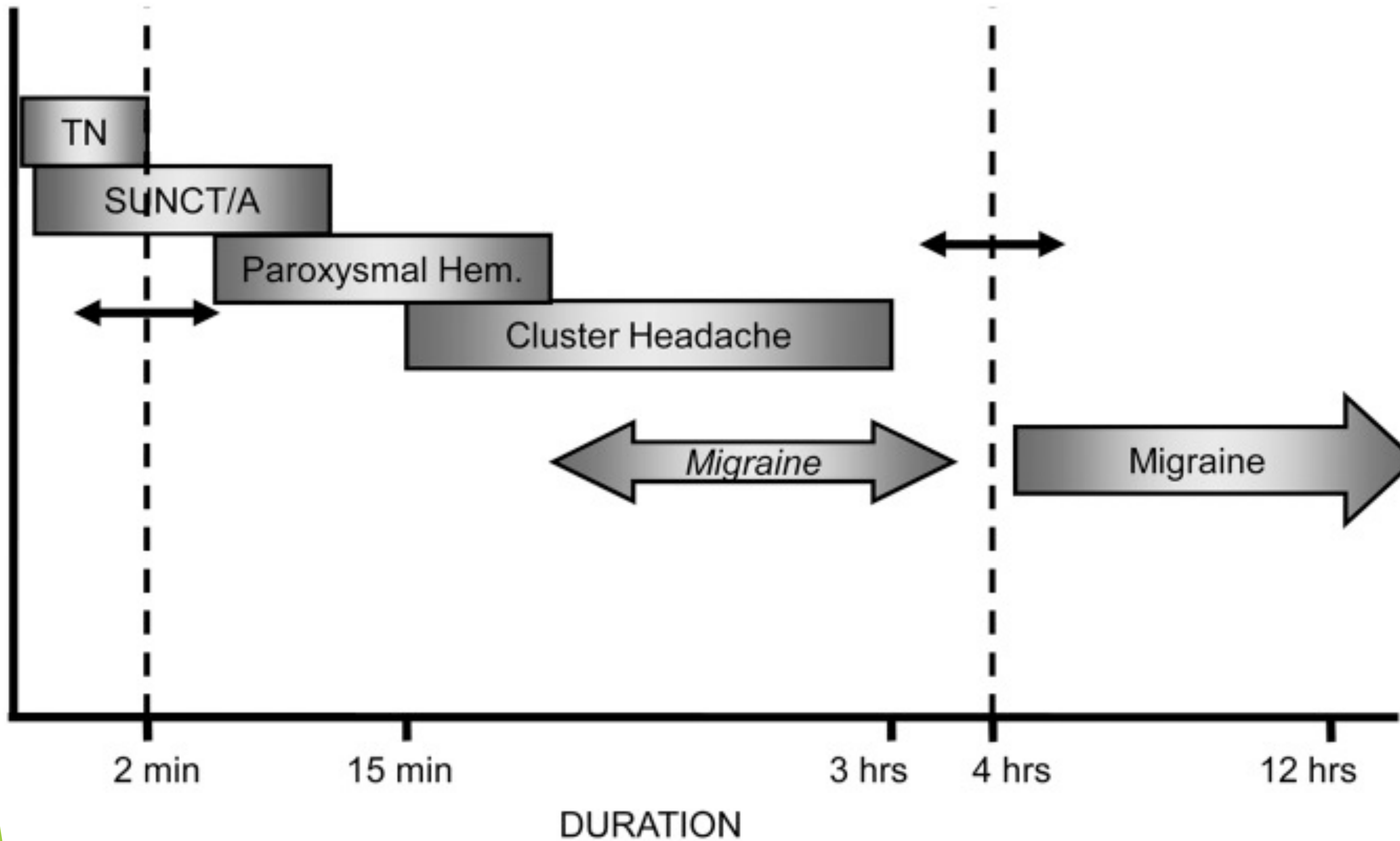

Br J Pain. 2012 Aug; 6(3): 106–123.
doi: 10.1177/2049463712456355

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SUNCT - Diagnosis

- **S**hort-lasting **U**nilateral **N**euralgiform headache with **C**onjunctival injection and **T**earing
- **Moderate or severe unilateral head pain**
- Orbital, supraorbital, temporal (trigeminal distribution)
- Lasting for 1–600 seconds
- Single stabs, series of stabs or in a saw-tooth pattern
- **One** of the following ipsilateral to the pain:
  - conjunctival injection and/or lacrimation
  - nasal congestion and/or rhinorrhoea
  - eyelid edema
  - forehead and facial sweating
  - forehead and facial flushing
  - sensation of fullness in the ear
  - miosis and/or ptosis
- Occurring with a frequency of at least one a day

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SUNCT - Treatment

- MRI brain wwo and MRA head and neck PRIOR TO TREATMENT
  - Association with small noncompressive prolactinomas

- 1st line: Lamotrigine
- 2nd line: gabapentin or topiramate
- Indomethacin, naproxen, valproate
- Unilateral nerve blocks (trigeminal or occipital)

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Paroxysmal Hemicrania

- At least 20 attacks fulfilling criteria B-E
- Severe unilateral orbital, supraorbital and/or temporal pain lasting 2-30 minutes
- Either or both of the following:
  - at least one of the following symptoms or signs, ipsilateral to the headache:
    - conjunctival injection and/or lacrimation
    - nasal congestion and/or rhinorrhoea
    - eyelid edema
    - forehead and facial sweating
    - miosis and/or ptosis
  - sense of restlessness or agitation
- Occurring with a frequency of >5 per day
- Prevented absolutely by therapeutic doses of indomethacin

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Paroxysmal Hemicrania - Treatment

- First line: indomethacin 25 mg tid, then titrating up every 5-7 days, max: 75 mg tid
  - Causes lots of GI upset
- Nerve blocks (Occipital or SPG)
- Lamotrigine, topiramate, gabapentin
- Likely referral to headache specialists

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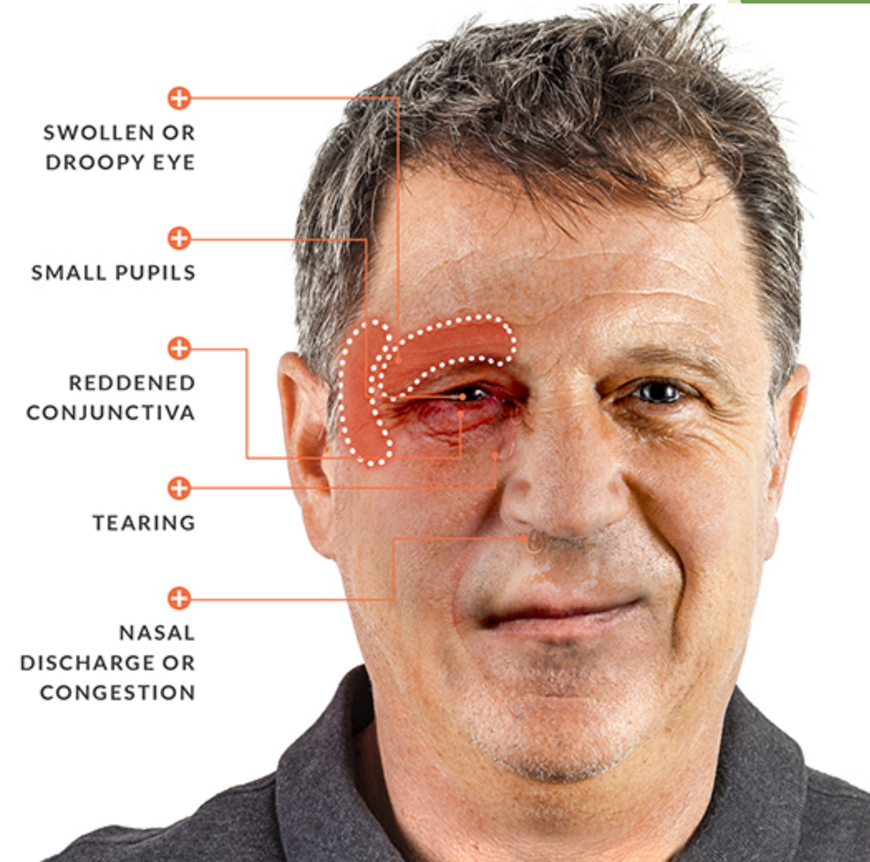
Cluster headache - Diagnosis

- At least **five** attacks fulfilling criteria B-D
- **Severe or very severe unilateral** orbital, supraorbital and/or temporal pain lasting **15-180 minutes** (when untreated)[1]
- Either or both of the following:
  - at least one of the following symptoms or signs, ipsilateral to the headache:
    - conjunctival injection and/or lacrimation
    - nasal congestion and/or rhinorrhoea
    - eyelid edema
    - forehead and facial sweating
    - miosis and/or ptosis
  - **sense of restlessness or agitation**
- Occurring with a frequency between **one every other day and 8 per day**



hmccentre.com/health-services/cluster-headache/

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Question #3

Which one of the new CGRP antagonists is indicated for episodic cluster headache?

A. Aimovig®
B. AJOVY®
C. Emgality®
D. VYEPTI™

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Question #3

Which one of the new CGRP antagonists is indicated for episodic migraine?

A. Aimovig®
B. AJOVY®
C. **Emgality®**
D. VYEPTI™

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Cluster Headache

- Acute attack:
  - Sumatriptan SC or IN, zolmitriptan
  - Oxygen 12-15 L/min high flow
  - **Emgality** ® 300 mg sQ (3 – 100 mg prefilled syringes) – start of cycle
- Prevention:
  - Verapamil
  - Unilateral ONB (with steroid)
  - Unilateral SPG block
  - Melatonin – up to 10 mg
  - Gabapentin, topiramate, valproic acid
  - Baclofen
- Likely referral to headache specialists

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Hemicrania Continua

- Present for >3 months, **unilateral** headache with exacerbations of moderate or greater intensity
- At least one that is ipsilateral to the headache:
    - conjunctival injection and/or lacrimation
    - nasal congestion and/or rhinorrhoea
    - eyelid edema
    - forehead and facial sweating
    - >miosis and/or ptosis
  - a sense of **restlessness or agitation**, or aggravation of the pain by movement
- **Responds absolutely to therapeutic doses of indomethacin**

Hemicrania Continua - Treatment

- First line: **indomethacin** 25 mg tid, then titrating up every 5-7 days, max: 75 mg tid
  - Causes lots of GI upset
- Nerve blocks (Occipital or SPG)
- Lamotrigine, topiramate, gabapentin
- Likely referral to headache specialists

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	CLUSTER	PH	SUNCT/SUNA	HC
Attack Frequency	Up to 8/day	>5/day	At least 1	Chronic with exacerbations
Attack duration	15-180 min	2-30 min	1-600 seconds	N/A
Autonomic features	++	+	++	+
Sense of restlessness/agitation	+	+/-	+	+
Response to indomethacin	-	+	-	+

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Secondary Workup for ALL TACs

- MR brain wwo – rule out pituitary gland and posterior fossa lesions
- MRA head and neck – rule out vascular etiology (aneurysm)

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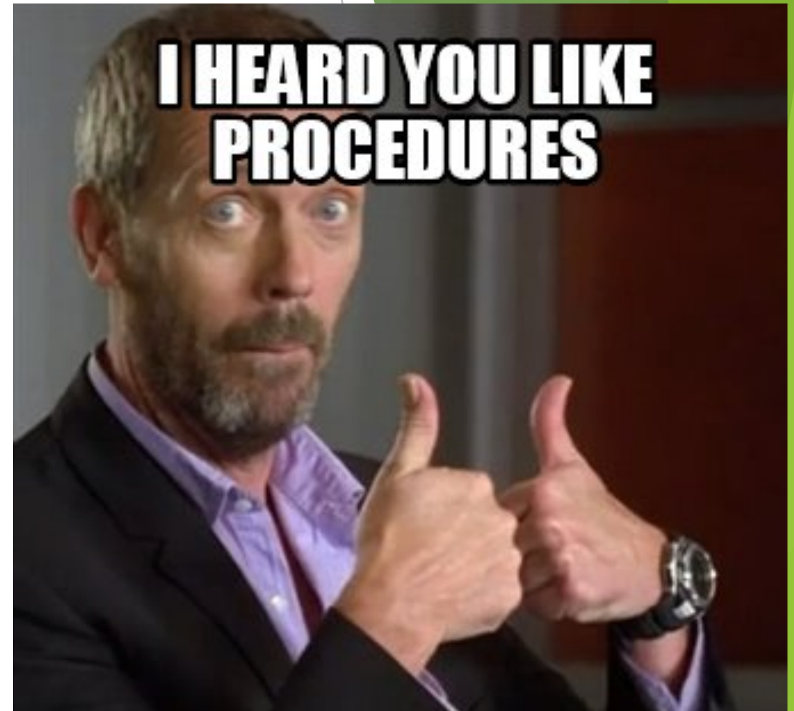

www.memecreator.org/meme/i-heard-you-like-procedures-so-i-made-a-procedure-on-how-to-write-the-procedure-/

Procedures and Neuralgias

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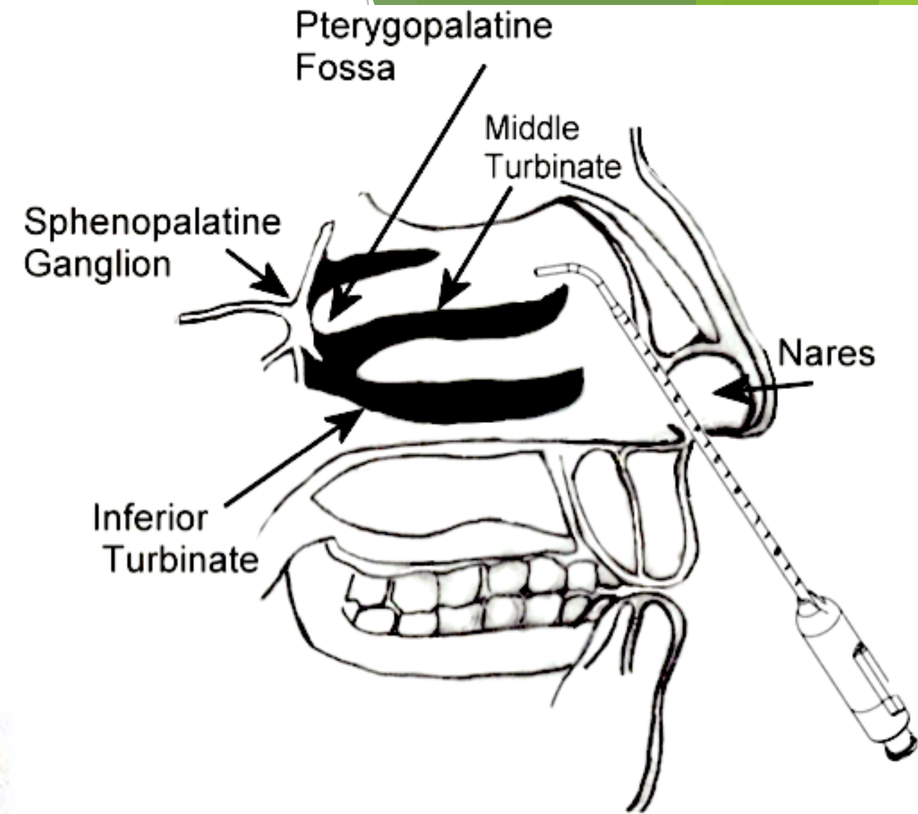
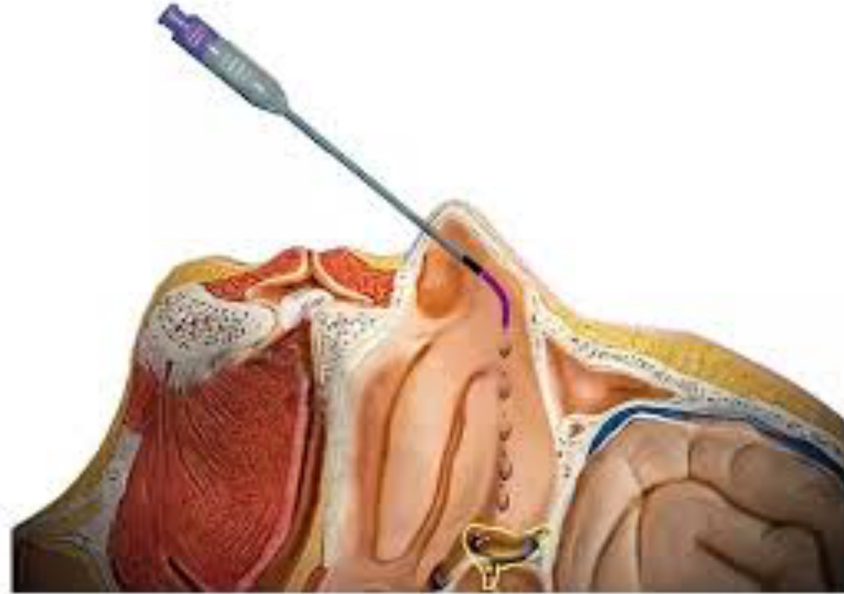
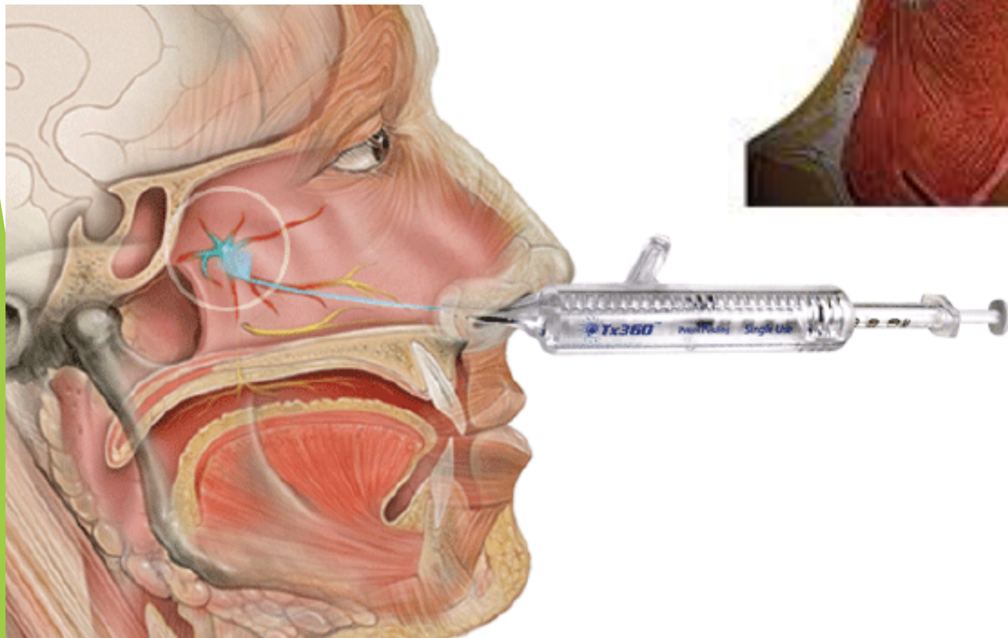
Sphenopalatine ganglion block





https://europe.tianmedical.com/revolutionary-headache-treatment/



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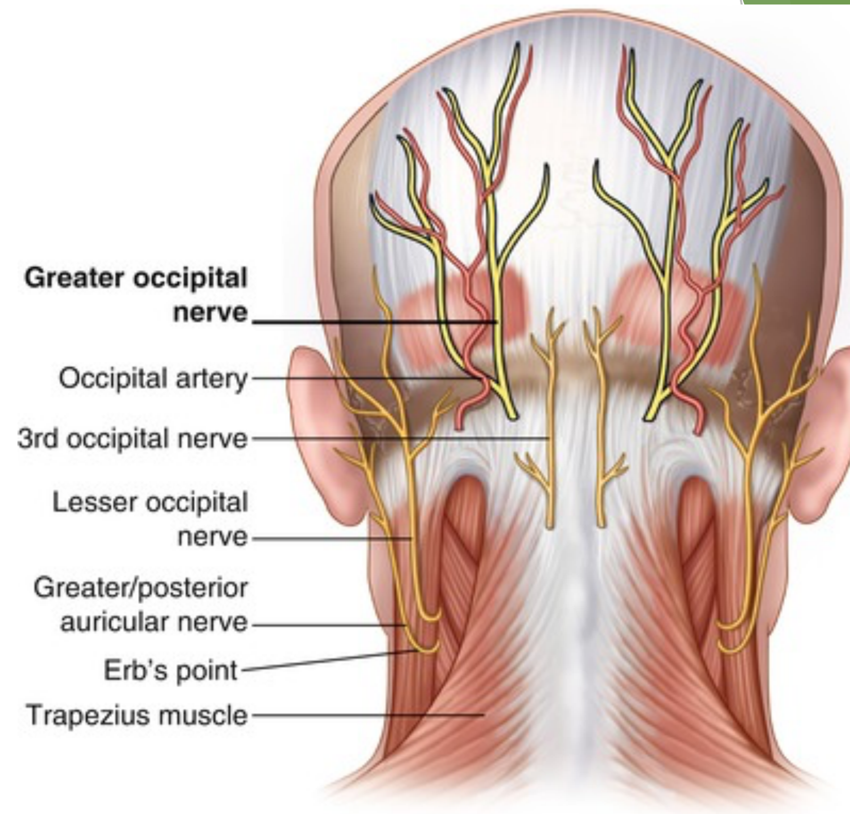
Occipital Neuralgia

- Unilateral or bilateral pain in distribution of greater, lesser, and/or third occipital nerves
- 2 of 3 characteristics:
  - Paroxysmal attacks – seconds to minutes
  - Severe
  - Shooting, stabbing, or sharp
- Both:
  - Dysesthesia and/or allodynia with palpation to scalp/hair
  - Either or both of the following:
    - Tenderness over affected areas
    - Trigger points at emergence of greater occipital nerve or C2 distribution
- Pain is eased temporarily by nerve block to affected areas



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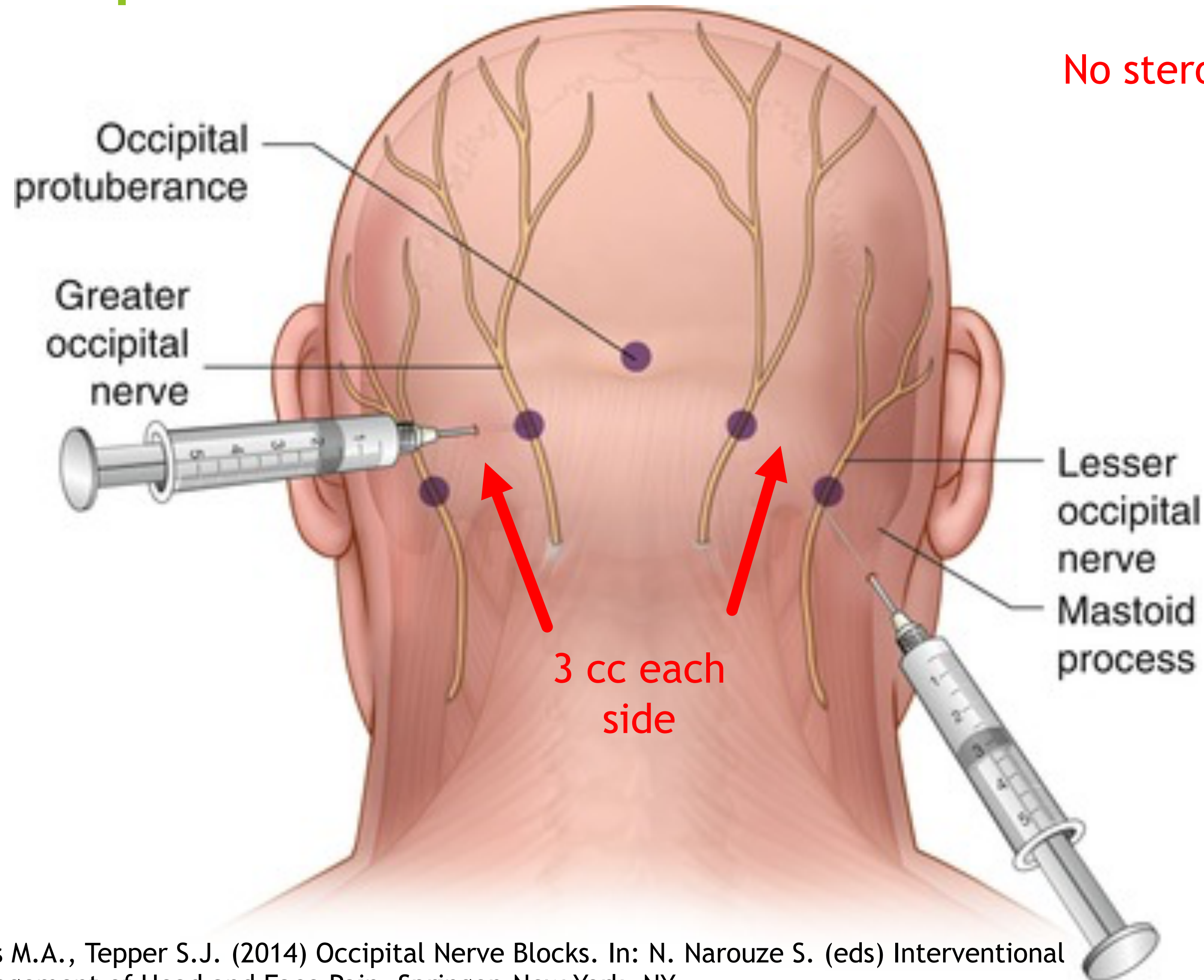
Occipital Nerve Block

25G x 5/8" – 3 ml syringe

No steroids



Mays M.A., Tepper S.J. (2014) Occipital Nerve Blocks. In: N. Narouze S. (eds) Interventional Management of Head and Face Pain. Springer, New York, NY

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Trigeminal Neuralgia

- Recurrent paroxysms of unilateral facial pain in the distribution(s) of one or more divisions of the trigeminal nerve (usually V2 or V3), with no radiation beyond
- All of the following characteristics:
  - lasting from a fraction of a second to 2 minutes
  - severe intensity
  - electric shock-like, shooting, stabbing or sharp in quality
- Precipitated by stimuli within the affected trigeminal distribution
  - Brushing teeth, talking, washing face

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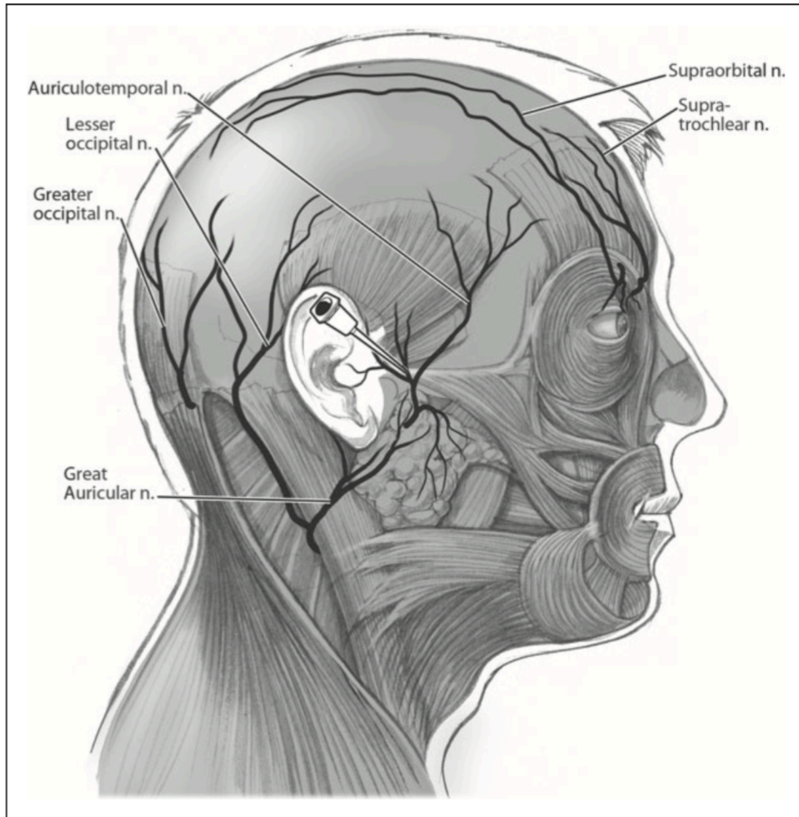
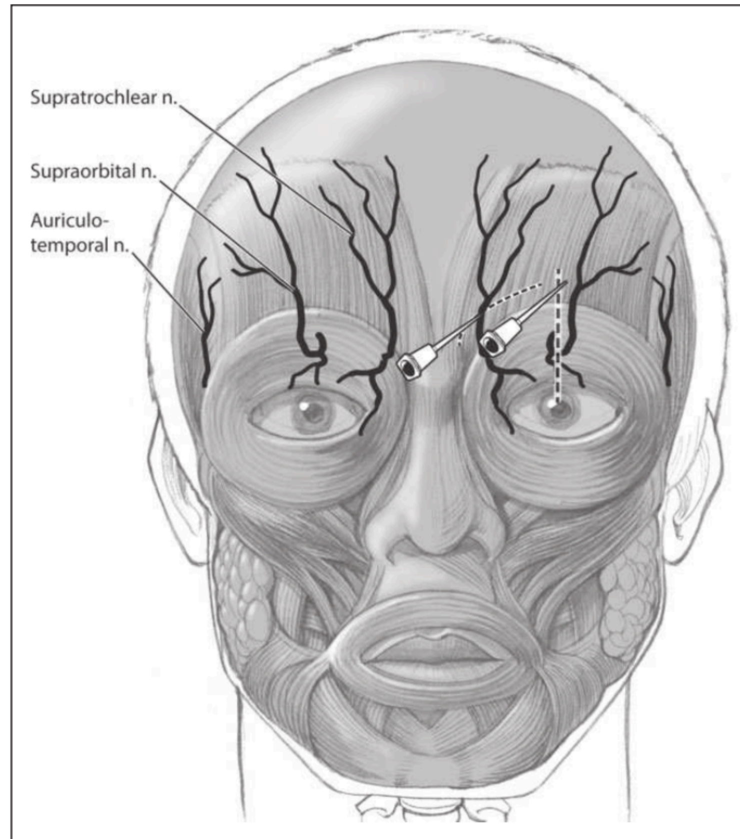
Trigeminal Nerve Block





Headache
© 2013 American Headache Society
ISSN 0017-8748
doi: 10.1111/head.12053
Published by Wiley Periodicals, Inc.

Review Article

Expert Consensus Recommendations for the Performance of Peripheral Nerve Blocks for Headaches – A Narrative Review

Andrew Blumenfeld, MD; Avi Ashkenazi, MD; Uri Napchan, MD; Steven D. Bender, DDS;

~0.25 cc at supratrochlear,
~0.25 cc at supraorbital, and
~0.25 cc at auriculotemporal

Botox® (onabotulinumtoxinA)

Every 12 weeks, 155 units injected over 31 sites

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Hypnic Headache

- Rare, primary headache disorder
- Alarm clock headache – EX: 2-4 AM
- >50 years old
- Only during sleep and causes wakening
- Lasts 15 min up to 4 hours
- No cranial autonomic features or restlessness

- Treatment: caffeine 80 mg – 200 mg at night (with or without melatonin)

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Secondary Headaches

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RED FLAGS

- **S** systemic symptoms (fever, weight loss)
- **S** secondary risk factors (HIV, cancer)
- **N** neurological symptoms or signs (confusion, impaired alertness)
- **O** onset: sudden, abrupt
- **O** older – new onset or progressive pain (>50 – GCA)
- **P** previous headache history: first time or change in the pattern
- **P** Papilledema
- **P** precipitated by valsalva
- **P** postural aggravation

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Thunderclap Headache

- Aneurysm, SAH
- RCVS/vasculitis
- Venous sinus thrombosis
- Spontaneous intracranial hypotension (CSF leak)
- Obstructive hydrocephalus
- Arterial dissection
- Primary thunderclap/cough headache

- Think…**VESSEL, VESSEL, VESSEL**

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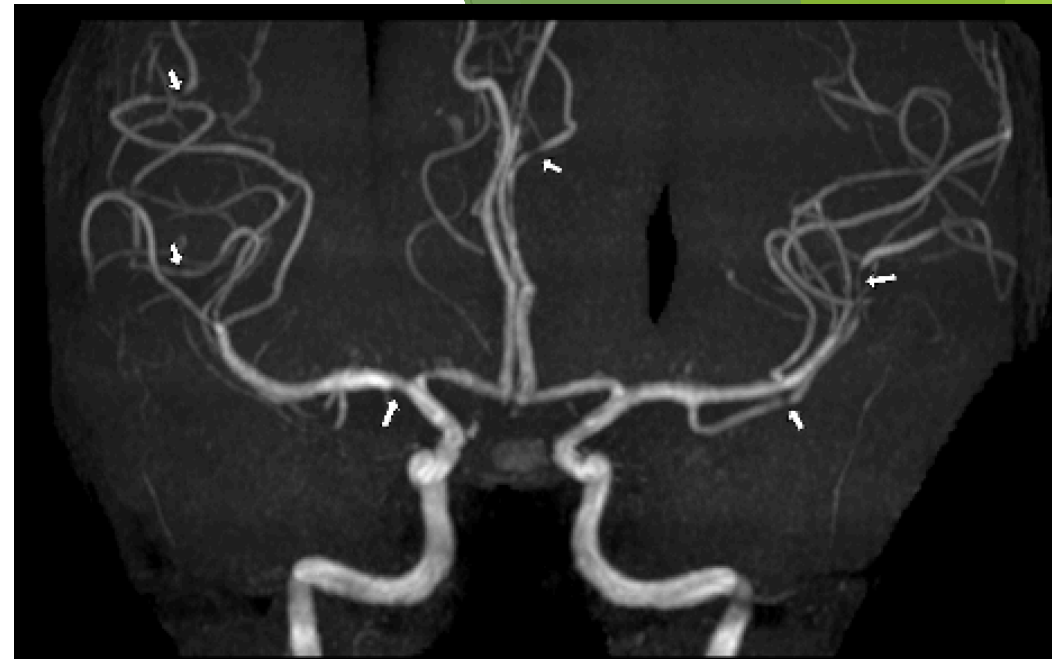
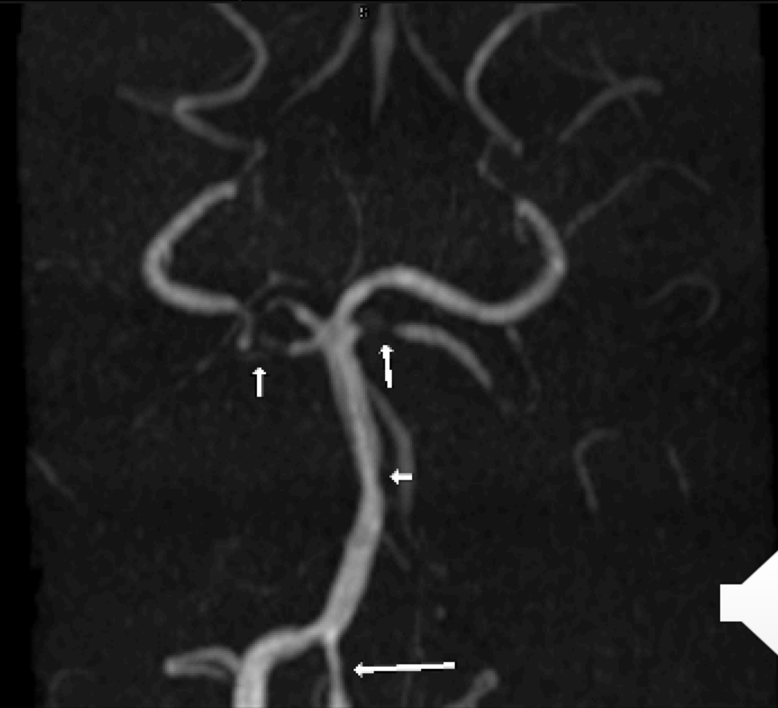
Reversible Cerebral Vasospasm Syndrome (RCVS)

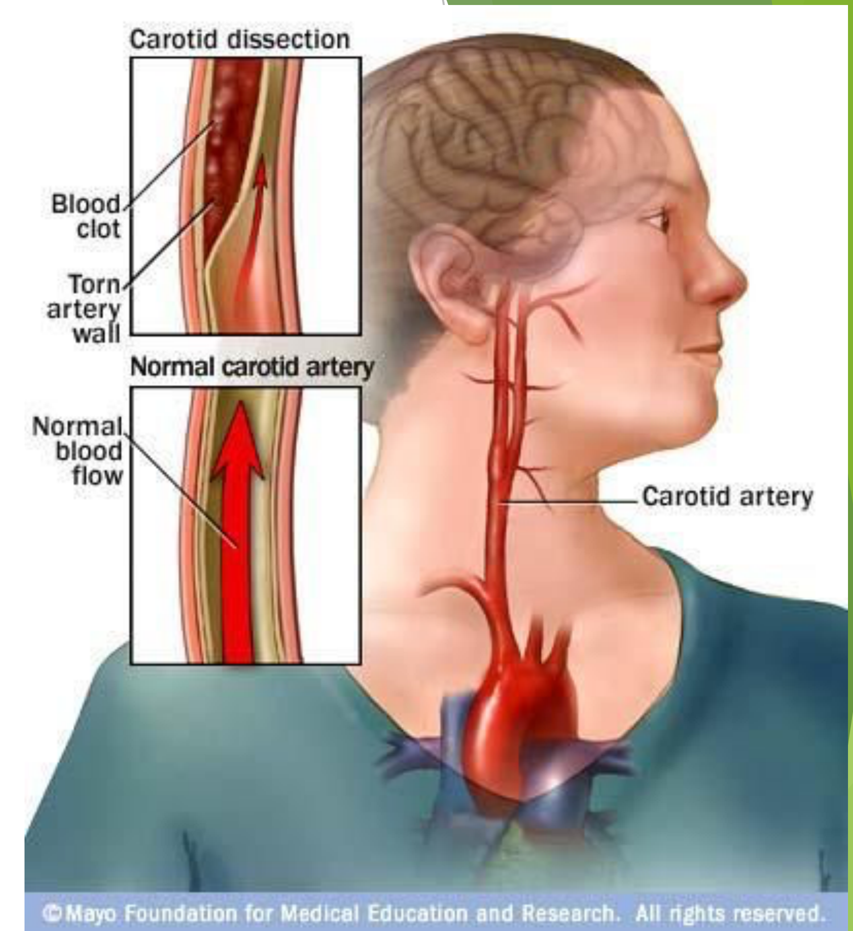
- Recurrent, thunderclap onset
- Etiology: SSRI, illicit drugs etc
- Diagnosis: **VESSEL IMAGING** – MRA head → CTA head
  - Early imaging may be normal
- Treatment: NO STEROIDS, TRIPTANS, or DHE
  - Use CCB like nimodipine 60 mg tid (at least 3 months)





Arterial Dissection

- Etiology: trauma (even mild)
- Risk factor: connective tissue disorders
- Signs/symptoms: head or neck pain (60-90%), Horner syndrome (25%), tinnitus, audible bruit, cranial neuropathies
- Diagnosis: VESSEL IMAGING



Mayoclinic.org

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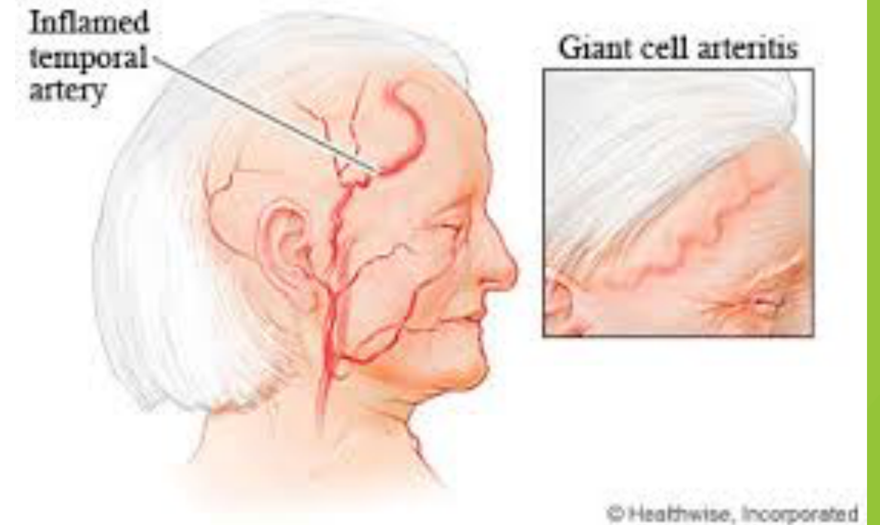
Temporal arteritis (Giant cell arteritis)



- Women, >50 years old
- Associated with polymyalgia rheumatica
- Check ESR and CRP
- Order biopsy
- Start high dose prednisone taper, starting at 60 mg daily
- Worry about vision!

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Venous sinus thrombosis

- F>M
- Pregnancy and peripartum, birth control pills
- Occlusion → increase in ICP
- Signs/symptoms: NEW headache + papilledema + vision changes
- Imaging: **MRV head**, CT head (normal in 30%), CTV
- Consider LP – rule out meningitis
- Treatment: Acute → heparin, if needed thrombectomy
  - Continue ASA x 3 months, repeat imaging

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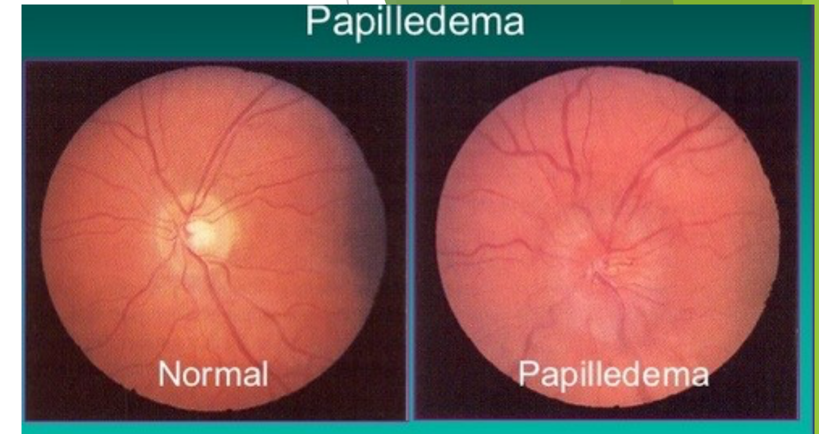
High pressure: Idiopathic Intracranial Hypertension (IIH)



- Previously called pseudotumor cerebri
- Mainly young, obese women, but can have a normal BMI!
- Key feature: **Transient visual obscurations**
- Diagnosis: **papilledema** (diagnosed by ophthalmology) and opening pressure >25 cm of water
- 50-60% of patients also have migraine
- Treatment: acetazolamide 500 mg bid, then increase up to 3-4g a day if needed
- Follow closely with ophthalmology for papilledema
- Consider addition of topiramate or Botox to treat migraines
- Very few actually need a shunt
- **Shunts do not treat HEADACHES**

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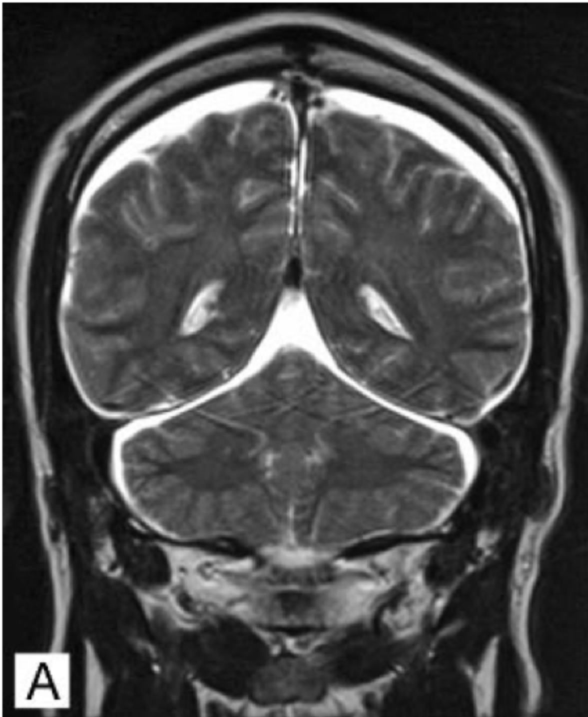
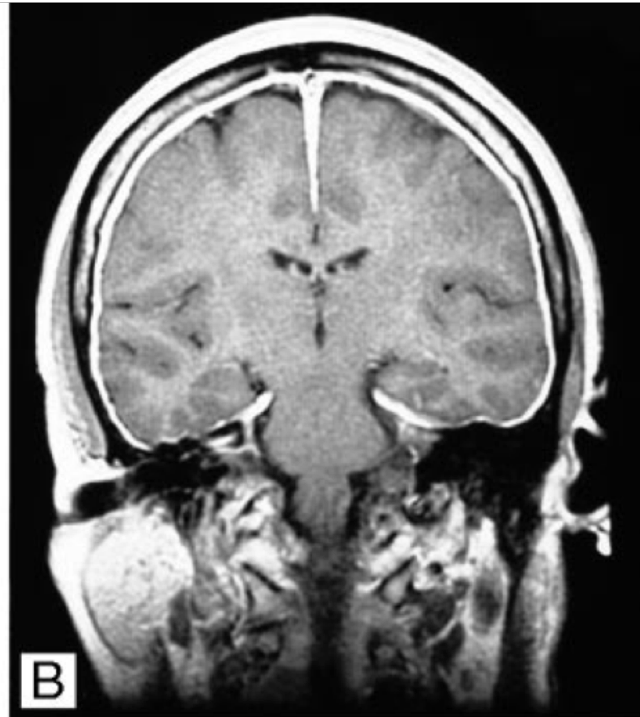
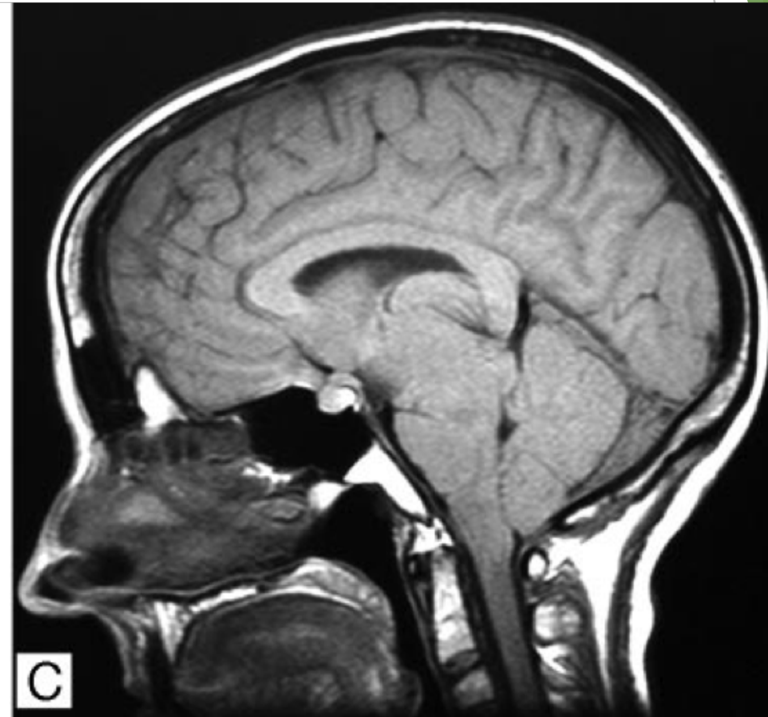
Intracranial hypotension – CSF leak

- Etiology: spontaneous, iatrogenic (LP, surgery), traumatic
- Associated with connective tissue disorders
- NEW DAILY PERSISTENT HEADACHE
  - **Orthostatic** – better laying down, worse sitting up
  - Abrupt onset
  - Tinnitus, under water sensation, **photophobia**
- Diagnosis: DON'T MEASURE opening pressure (only 30-40% are <6cm)
  - Look at MR brain yourself – need contrast
    - Imaging in NORMAL in ~30%
  - Make sure a "Chiari" is a true malformation
  - No need for meningitis workup
- Also seen in frontotemporal dementia, Parkinson's and even coma
- Treatment: fluids, caffeine → non-targeted high volume (at least 20 cc) blood patch
- Rare: rhinorrhea – think intracranial (but will not be orthostatic), secondary to IIH

Brain Imaging – Signs of intracranial hypotension







Subdural fluid collections

Smooth, diffuse, pachymeningeal enhancement

Brain sag

Research Article | HEAD & NECK

Diagnostic Criteria for Spontaneous Spinal CSF Leaks and Intracranial Hypotension

W.I. Schievink, M.M. Maya, C. Louy, F.G. Moser and J. Tourje

American Journal of Neuroradiology May 2008, 29 (5) 853-856; DOI: https://doi.org/10.3174/ajnr.A0956

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Summary

- Patients can have MORE THAN ONE headache disorder
- Don’t be afraid to start a preventative!
- Fast-acting versus slow-acting triptans
- Have ‘Top 3 Favorite’ preventative list and ’Top 2 Favorite’ abortive
- Consider CGRP antagonists, gepants, and ditans!
- Utilize ”At-Home Cocktails” to avoid ER visits
- Don’t be afraid to do nerve blocks in clinic!
- **Fioricet - <10x/month and only if contraindications to triptans**

Thank you!

Karissa.Secora@dignityhealth.org

https://memegenerator.net/instance/67959297/obi-wan-kenobi-wretched-hive-i-sense-a-disturbance-in-the-force-wait-no-its-a-migraine