Headache

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Background

- Headache….
  - Is pain localized to any part of the head, behind the eyes or ears, or in the upper neck.
  - Is among the most common medical complaints.
  - Is one of the most common neurological problems presented to GPs and neurologists.
- Almost half (50%) of the adult population have had a headache at lease once within the last year. **(**http://www.who.int/mediacentre/factsheets/fs277/en/**)**

Guideline for primary care management of headache in adults. Canadian Family Physician

- Headache on 15 or more days every month affects 1.7-4% of the world's adult population.
- The estimated lifetime prevalence of headache is 66%:
  - 46% to 78% for tension-type headache
  - 14% to 16% for migraine
  - 0.1% to 0.3% for cluster headache
- Most common primary headache disorders are tension-type headache, migraine and cluster headache.

Introduction

- The International Headache Society classification and diagnostic criteria can help physicians differentiate primary headaches (e.g., tension, migraine, cluster) from secondary headaches (e.g., those cause by infections or vascular disease).
- A thorough history and physical examination, and an understanding of the typical features of primary headaches, can reduce the need for neuroimaging, lumbar puncture, or other studies.
- Red flag signs and symptoms include focal neurological signs, papilledema, neck stiffness, an immunocompromised state, sudden onset of the worst headache in the patient's life, personality changes, headache after trauma, and headache that is worse with exercise. You have to mention all these red flags in your history taking notes: inquire about them and document them! If they are positive and you want to refer a pt you will have justification.

Objectives

- Headache types (primary and secondary and their causes)
- Differential diagnosis
- Red flags
- Diagnostic approach (diagnostic criteria)
- Management

Headache is a very common complaint so it is important to know how to diagnose, and when to act seriously or relaxed regarding a headache.

Table 1. International Classification of Headache Disorders, 2nd ed. (ICHD-2)

Primary headaches

Migraine

Tension-type

Cluster

Other (e.g., cold stimulus headache)

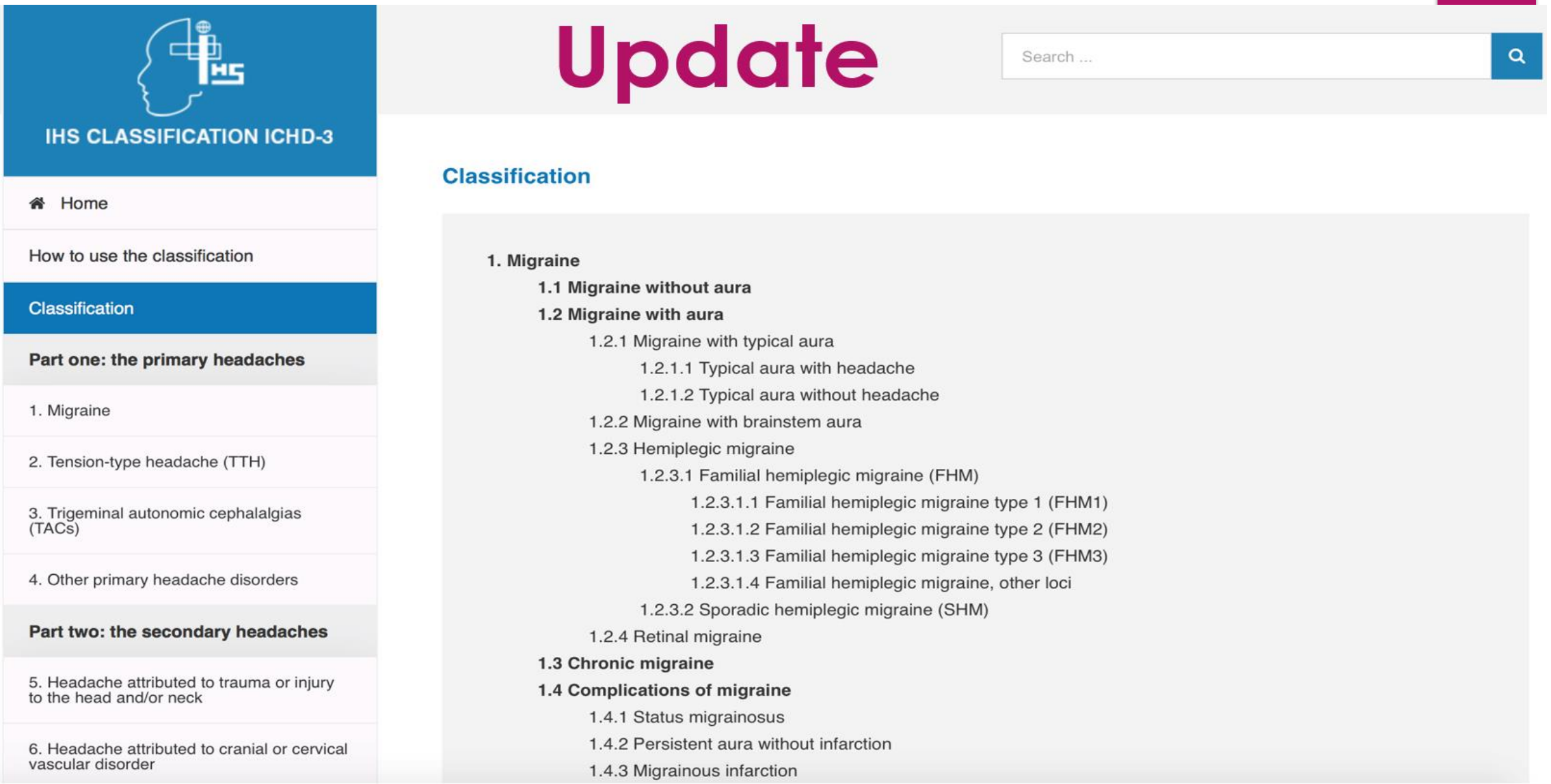
Secondary headaches

Headache attributed to any of the following: head or neck trauma, cranial or cervical vascular disorder, nonvascular intracranial disorder, substance use or withdrawal, infection, disturbance of homeostasis, psychiatric disorder

Headache or facial pain attributed to disorder of the cranium, neck, eyes, ears, nose, sinuses, teeth, mouth, or other facial or cranial structures

Adapted with permission from the American Academy of Neurology: Lipton RB, Bigal ME, Steiner TJ, et al. Classification of primary headaches. Neurology. *2004;63(3):428. Table 1. First level of The International Classification of Headache Disorders, 2nd edition. http://www.neurology.org/content/63/3/427.abstract.*

Update



This is the International classification of headache 3:
You can see how each topic has many subtypes.
This is a good reference for definition of headaches.

https://ichd-3.org/classification-outline/

Types of headaches

PRIMARY

- Migraine
- Tension type
- Cluster
- Other trigeminal autonomic cephalalgias

SECONDARY

- Space-occupying mass
- Vascular lesion
- Infection
- Inflammatory
- Metabolic disturbance
- Systemic problem
- Referred (tooth ache, otalgia)

Misconceptions

- Acute or chronic sinusitis appears to be an uncommon cause of recurrent headaches, and many patients presenting with sinus headache turn out to have migraine. You need to take a good history! They might have coexisting sinusitis and migraine headache
- Patients frequently attribute headaches to eye strain. Headaches are only rarely due to refractive error alone. First take history of the headache before you say its b/c of refractive error alone.
- Hypertension can cause headaches: this is true in case of hypertensive emergencies, it is probably not true for typical migraine or tension headaches. Remember hypertension is a silent killer, so it doesn't cause symptoms, it only causes headache if it is hypertensive emergency or urgency (>180)

uptodate

Case scenario 1

- A 37-year-old woman presents with a 12-year history of episodic headaches. She experiences these 4 times a week, typically beginning at the end of a working day. The pain is generalised and described as similar to wearing a tight band (زي الطوق) around her head. The headaches are bothersome, but not disabling, and she denies any nausea or vomiting. She is slightly sensitive to noise but has no photophobia. Pain during her attacks typically responds to ibuprofen. Examination reveals tenderness of her scalp and both trapezius muscles.
- Diagnosis: tension-type headache.

- A 56-year-old man presents with a 25-year history of constant headache. The onset was insidious and he is certain that the only time he is headache-free is when he sleeps. He states the headache is generalised and his neck and shoulders are always 'tight'. He denies any associated autonomic symptoms including eye tearing, nasal congestion, light and sound sensitivity, nausea, or vomiting.
- Diagnosis: tension-type headache

How do we define tension type?

1- timing: **30 mins to 7 days** (migraine and cluster DO NOT last for 7 days)

2- location: bilateral

3- non pulsating / **pressure** or tightening quality

4- mild to moderate (NOT severe)

5- NO associated symptoms (no autonomic, no photophobia, no nausea or vomiting)

6- not aggravated by activity (this is more likely migraine)

7- infrequent vs frequent (why do we need to know? To see if pt needs prophylaxis) infrequent (<1 per month = 10 per year) while frequent (for the past 3 months he had at least 10 episodes per month)

Table 2. ICHD-2 Diagnostic Criteria for Episodic Tension-Type Headache

Infrequent

At least 10 episodes occurring fewer than one day per month on average (fewer than 12 days per year) and fulfilling the following criteria:

- Headache lasts 30 minutes to seven days
- Headache has at least two of the following features: bilateral location, pressing or tightening (nonpulsating) quality, mild or moderate intensity, not aggravated by routine physical activity such as walking or climbing stairs
- Both of the following: no nausea or vomiting (anorexia may occur), either photophobia or phonophobia

Headache is not attributed to another disorder

Frequent

At least 10 episodes occurring on more than one but fewer than 15 days per month for at least three months and fulfilling all of the criteria for infrequent episodic tension-type headache

ICHD-2 = International Classification of Headache Disorders, 2nd ed.

Adapted with permission from the American Academy of Neurology: Lipton RB, Bigal ME, Steiner TJ, et al. Classification of primary headaches. Neurology. *2004;63(3):431. Table 4. ICHD-2 criteria for episodic tension-type headache (TTH). http://www.neurology.org/content/63/3/427.abstract.*

Medication for tension-type headache

Medication	Dose
Acute	
Ibuprofen	400 mg
Naproxen sodium	500-550 mg
Acetaminophen	1000 mg
Prophylactic	
First line	
Amitriptyline (Tricyclic antidepressants)	10-100 mg/d
Nortriptyline	10-100 mg/d
Second line (2nd generation antidepressant)	
Mirtazapine	30 mg/d
Venlafaxine	150 mg/d

Should know each one: frequency and side effects and instructions (ex: NSAIDs not on empty stomach)

What are the effects of drug treatments for chronic tension-type headache?

Beneficial	⇑⇑	• Amitriptyline
Likely to be beneficial	⇑?	• Noradrenergic and specific serotonergic antidepressants
Unknown effectiveness	??	• Anticonvulsant drugs • Opioid analgesics • Paracetamol • Serotonin re-uptake inhibitors • Tricyclic antidepressants (other than amitriptyline)
Likely to be ineffective or harmful	⇓⇓	• Benzodiazepines • Botulinum toxin Botulinum works better with migraine • Non-steroidal anti-inflammatory drugs (NSAIDs)

What are the effects of non-drug treatments for chronic tension-type headache?

Unknown effectiveness	??	• Acupuncture • Cognitive behavioural therapy

Here you see based on evidence: best for prophylactic is amitriptyline (TCA) but make sure the pt is not taking MAO inhibitor! To avoid serotonin syndrome.

Case scenario 2

- Ahmed is a 14-year-old boy. He attends your clinic accompanied by his mother. He presents with a two months history of headaches that he describes as “pulsating” and that make his head “very sore”.
- He says that in the past two months, he has had 6 of these headaches. He also says that light hurts his eyes when he has the headaches. He does not feel nauseous or vomit during the headaches.

- Mother tells you that when Ahmed has the headaches he is unable to go to school and that the headaches last from 2 to 4 hours. She gives Ahmed paracetamol and is that doesn't work she also gives him ibuprofen. This combination of medication helps.
- Diagnosis: migraine

You diagnose migraine without aura.

How would you manage this?

- Reassure them that a serious underlying cause is unlikely.
- Tell them that migraines are a well-recognised problem although what causes them is not known for certain.
- Explain the risk of medication overuse headache.
- You should also do physical exam: thorough neurological exam + fundoscopy to check for papilledema.

TO DIAGNOSE PT W/ MIGRAINE:

1. # of episodes:

Without aura at least 5 episodes /

With aura at least 2 episodes (with aura is more serious b/c of ischemic stroke risk)

2. Duration: 4 – 72 hours

3. location: unilateral

4. character: **pulsating**

5. Moderate to severe intensity

6. Associated symptoms: nausea, vomiting, photophobia, phonophobia

Table 4. ICHD-2 Diagnostic Criteria for Migraine Without Aura

At least five episodes fulfilling the following criteria:

- Headache episodes lasting four to 72 hours (untreated or unsuccessfully treated)
- Headache has at least two of the following characteristics: unilateral location, pulsating quality, moderate or severe pain intensity, aggravated by (or causes avoidance of) routine physical activity such as walking or climbing stairs
- During the headache, the patient experiences at least one of the following: nausea or vomiting; and photophobia and phonophobia

Headache is not attributed to another disorder

ICHD-2 = International Classification of Headache Disorders, 2nd ed.

Adapted with permission from the American Academy of Neurology: Lipton RB, Bigal ME, Steiner TJ, et al. Classification of primary headaches. Neurology. *2004;63(3):428. Table 2. ICHD-2 diagnostic criteria for 1.1 Migraine without aura. http://www.neurology.org/content/63/3/427.abstract.*

International Classification of Headache Disorders, 3rd Edition

Classification	Determinants
Migraine without aura	A. At least five attacks fulfilling criteria B, C, and D B. Attack lasting 4 to 72 hours (untreated or unsuccessfully treated) C. Having at least two of these characteristics: aggravation by or causing avoidance of routine physical activity (e.g., walking or climbing stairs), moderate or severe pain intensity, pulsating quality, unilateral location D. Having at least one of these conditions during the headache: nausea and/or vomiting, phonophobia or photophobia
Migraine with aura	A. At least two attacks fulfilling criteria B and C B. Having one or more of these fully reversible aura symptoms: brainstem, motor, retinal, sensory, speech and/or language, visual C. Having at least two of these characteristics: at least one aura symptom spreads gradually over at least 5 minutes and/or two or more symptoms occur in succession; each individual aura symptom lasts 5 to 60 minutes; at least one aura symptom is unilateral; the aura is accompanied or followed within 60 minutes by headache
Episodic migraine*	Characterized by those with migraine who have zero to 14 headache days per month[4]
Chronic migraine	A. Headaches at least 15 days per month for more than 3 months and fulfilling criteria B and C B. Occurring in patients with at least five attacks fulfilling criteria in the Migraine with Aura or Migraine without Aura sections C. For at least 8 days per month for more than 3 months, fulfills any of the following: 1. Criteria C and D for Migraine without Aura section 2. Criteria B and C for Migraine with Aura section 3. Believed by the patient to be migraine at onset and relieved by triptan or ergot derivative
Medication-overuse headache	A. Headache occurring on at least 15 days per month in a patient with a pre-existing headache disorder B. Regular overuse for more than three months of one or more drugs that can be taken for acute and/or symptomatic treatment of headache†

*—Episodic migraine is not recognized in the *International Classification of Headache Disorders*, 3rd ed., but its definition in the literature is recognized as zero to 14 headache days per month.

†—Regular intake of ergotamine, triptan, or opioid medications for a total of at least 10 days per month or nonopioid medications (e.g., acetaminophen, nonsteroidal anti-inflammatory drugs) for at least 15 days per month.

For acute management of migraine

Taking into account the person's preference. comorbidities and risk of adverse events:

Offer therapy:

- First line (abortive or rescue medication / acute management): simple analgesics (Ibuprofen 400 mg, ASA 1000 mg, naproxen sodium 500-550 mg, acetaminophen 1000 mg)
- Second line: triptans (can be given IV, IM, spray, etc..)

Uptodate

- **Mild to moderate attacks** – not associated with vomiting – simple analgesics (NSAIDs, acetaminophen) or combination analgesics.
- **Moderate to severe attacks** – not associated with vomiting – oral migraine-specific agents are first-line, including oral triptans and the combination of sumatriptan-naproxen.
- When complicated by vomiting, non oral migraine-specific medications including subcutaneous sumatriptan OR nasal sumatriptan, non oral antiemetic (you should manage the pt as a whole so don't forget to mention it).

Summary: 1st line NSAIDS (ibuprofen / acetaminophen) if not enough add sumatriptan. If pt is vomiting give it in a non-oral route and add antiemetic.

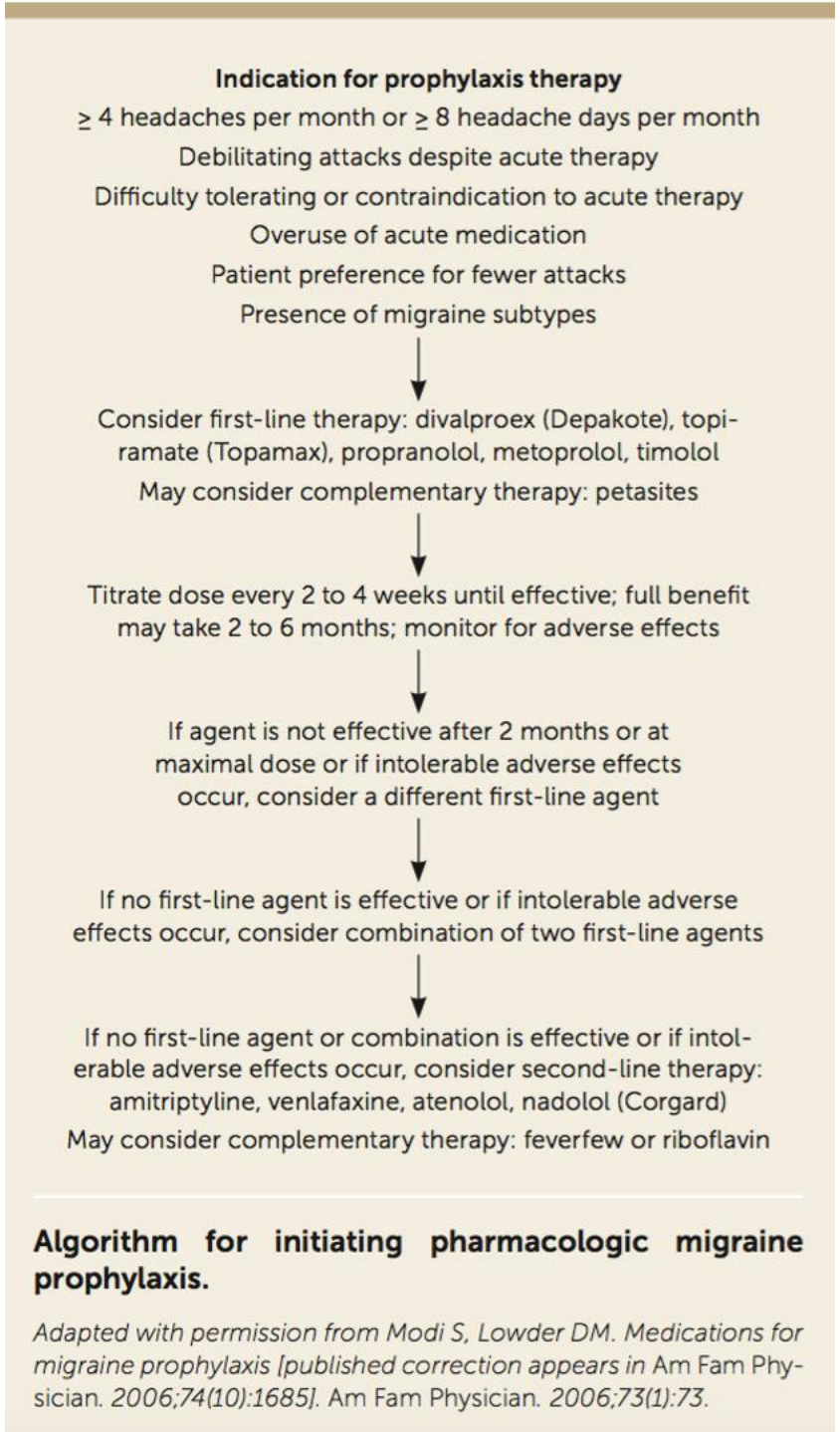
Managing patients with migraine

- Pay attention to lifestyle and specific migraine triggers. You have to explain this well to the pt / tell them to look for their triggers and avoid them.
- Lifestyle factors to avoid include:
  - Irregular or skipped meals, a stressful lifestyle, lack of exercise and obesity.
  - Common triggers for headaches include menses, stress, exertion, sleep disturbance, odors, caffeine withdrawal, and dietary items such as cheese, wine, chocolate, monosodium glutamate (MSG) الملح الصيني, and hot dogs.
- Use acute pharmacological therapy for individual attacks.
- Use prophylactic pharmacologic therapy, when indicated (if there is >5 attacks, disabling, affecting quality of life, can't do daily functions).
- Evaluate and treat coexistent medical and psychiatric disorders.

Guideline for primary care management of headaches in adults. Canadian Family Physician

Acute migraine medication

First line	Ibuprofen 400 mg ASA 1000 mg Naproxen sodium 500-550 mg Acetaminophen 1000 mg
Second line	**Triptans**: Oral sumatriptan 100 mg Subcutaneous sumatriptan 6 mg (if the patient is vomiting early in the attack) Nasal spray sumatriptan 20 mg (If patient is nauseated) **Antiemetics**: domperidone 10 mg or metoclopramide 10 mg for nausea
Third line	Naproxen sodium 500-550 mg in combination with a triptan
Fourth line	Fixed-dose combination analgesics (with codeine if necessary; not recommended for routine use)



Algorithm for initiating pharmacologic migraine prophylaxis.

Adapted with permission from Modi S, Lowder DM. Medications for migraine prophylaxis [published correction appears in Am Fam Physician. *2006;74(10):1685].* Am Fam Physician. *2006;73(1):73.*

Prophylactic Medications

Prophylactic medication	Starting dose	Titration, daily dose increase	Target dose or therapeutic range
First line propranolol*	20 mg twice daily	40 mg/wk	40-120 mg twice daily
Metoprolol	50 mg twice daily	50 mg/wk	50-100 mg twice daily
Amitriptyline	10 mg at bedtime	10 mg/wk	10-100 mg at bedtime
Second line Topiramate (anti-convulsant)	25 mg/d	25 mg/wk	50 mg twice daily
Candesartan (ARB)	8 mg/d	8 mg/wk	Few side effects: limited experience in prophylaxis
Gabapentin (anti-convulsant)	300 mg/d	300 mg every 3-7 d	Few drug interactions

*First line: beta blocker (propranolol) UNLESS there is contraindication like **asthma, COPD, bradycardia**.

Very important table!

No need to know the doses → you should know the class, the name of the medication, adverse effect, and contraindication!

If pt starts having side effects → consider other drugs.

VERY IMP: do not give any antidepressant within 14 days of MAOI!

Dosing Recommendations for First- and Second-Line Medications for Episodic Migraine Prevention

Drug	Starting dose	Daily dosage	Adverse effects	Contraindications	Cost per month for minimum daily dosage*
Beta blockers					
Atenolol	50 mg	100 mg daily	Bradycardia, depression, fatigue, hypotension, impotence, lethargy	Asthma, bradycardia, COPD	$10
Metoprolol	50 mg two times daily	37.5 to 200 mg daily	Bradycardia, depression, fatigue, hypotension, impotence, lethargy	Asthma, bradycardia, COPD	$20
Nadolol (Corgard)	40 to 80 mg	20 to 160 mg daily	Bradycardia, depression, fatigue, hypotension, impotence, lethargy	Asthma, bradycardia, COPD	$40 ($140)
Propranolol ★	40 mg divided two to three times daily	120 to 240 mg two to three times daily	Bradycardia, depression, fatigue, hypotension, impotence, lethargy	Asthma, bradycardia, COPD	$50
Timolol	20 to 30 mg	20 to 30 mg daily or 10 to 15 mg two times daily	Bradycardia, depression, fatigue, hypotension, impotence, lethargy	Asthma, bradycardia, COPD	$50
Anticonvulsants					
Divalproex (Depakote)	250 mg	250 to 500 mg twice daily	Alopecia, asthenia, dizziness, hepatic failure, nausea (common), pancreatitis, somnolence, thrombocytopenia, tremors, weight gain	Liver disease, pregnancy	$15 ($200)
Divalproex ER (Depakote ER)	500 mg	500 to 1,000 mg once daily			$50 ($200)
Topiramate (Topamax) ★	15 to 25 mg	25 to 200 mg once daily	Paresthesia (common), decreased appetite, difficulty with memory and concentration, fatigue, kidney stones, language problems, metabolic acidosis, nausea	Pregnancy	$15 ($180)
Antidepressants					
Amitriptyline ★	10 mg	25 to 150 mg once daily	Blurry vision, constipation, decreased seizure threshold, dry mouth, orthostatic hypotension, QT prolongation, sedation, tachycardia, urinary retention	Do not use within 14 days of MAOI, avoid in acute myocardial infarction, seizure disorder	$10
Venlafaxine	37.5 mg	150 mg once daily	Dry mouth, hypertension, insomnia, mydriasis, nausea, nervousness, seizures	Do not use within 14 days of MAOI	$30

COPD = chronic obstructive pulmonary disease; ER = extended release; MAOI = monoamine oxidase inhibitor.

*—Estimated retail price of one month's treatment based on information obtained at https://www.goodrx.com (accessed September 25, 2018).

Information from references 8 and 10; drug information from Prescription Drug Cards. Doses provided are for doses studied.

Prophylactic medication

Explain to the pt what prophylactic medication is and what we want to accomplish:
- We want to decrease the attacks to improve your quality of life.
- And we want to decrease the use of over the counter medication which have side effects.

- **Educate patients** on the need to take the medication daily and according to the prescribed frequency and dosage
- Ensure that patients have realistic expectations, explain that….
  - Headache attacks will likely not abolish completely (it won't go away completely but it will decrease in number and severity)
  - A reduction in headache frequency of 50% is usually considered worthwhile and successful
  - It might take 4-8 weeks for substantial benefit to occur (just like antidepressants)
- If the prophylactic drug provides substantial benefit in the first 2 months of therapy, this benefit might increase further over several additional months of therapy
- Evaluate the effectiveness of therapy using patient diaries (tell them to write how many attacks they got, what triggered it, etc..)

Prescribing prophylactic medication

- For most prophylactic drugs, initiate therapy with a low dose and increase the dosage gradually to minimize side effects. (ex: Topamax we start with 25 for 2 weeks then if the pt tolerates we increase it to 50 then continue till 100 → sometimes pt can have affect with 25 so we stop here)
- Increase the dose until the drug proves effective, until dose limiting side effects occur, or until a target dose is reached.
- Continue the prophylactic drug for at least 6-8 weeks after dose titration is completed.
- Because migraine attack tendency fluctuates over time, consider gradual discontinuation of the drug for many patients after **6 to 12 months** of successful prophylactic therapy.

Case scenario 3

- Aliya is a 28-year-old woman who was diagnosed with migraine with aura 6 months ago. She has, on average, 1 migraine attack per week, for which she takes an NSAID and an anti-emetic.
- Because Aliya has migraine about 4 times per month, she is unlikely to develop medication overuse headache. You are therefore happy with her current treatment plan.
- However, during an attack, she is unable to work or continue her normal daily activities. She also worries a lot about when the next attack is going to happen and their frequency causes her to take a lot of time off work.

Aura

- **Sensory, motor, or language symptoms.**

Characteristics of migraine with aura (we need **2** attacks to diagnose):

1. Unilateral
2. Pulsating
3. w/ nausea, vomiting, phonophobia, photophobia
4. Increase with physical activity
5. Duration 4 to 72 hrs
6. **Aura** characteristics: visual or neurological or autonomic lasts from **5 to 60** minutes preceding attack and is **FULLY reversible.**

Table 3. ICHD-2 Diagnostic Criteria for Migraine with Typical Aura

At least two episodes fulfilling the following criteria:

- Aura consisting of at least one of the following, but no motor weakness: fully reversible visual symptoms including positive features (e.g., flickering lights, spots or lines) and/or negative features (i.e., loss of vision); fully reversible sensory symptoms including positive features (i.e., pins and needles) and/or negative features (i.e., numbness); fully reversible dysphasic speech disturbance
- At least two of the following: homonymous visual symptoms and/or unilateral symptoms; at least one aura symptom develops gradually over five or more minutes and/or different aura symptoms occur in succession over five or more minutes; each symptom lasts at least five minutes, but no longer than 60 minutes
- A headache that fulfills the criteria for migraine without aura (Table 4), and begins during the aura or follows the aura within 60 minutes

Headache not attributed to another disorder

ICHD-2 = International Classification of Headache Disorders, 2nd ed.

Adapted with permission from the American Academy of Neurology: Lipton RB, Bigal ME, Steiner TJ, et al. Classification of primary headaches. Neurology. *2004;63(3):429. Table 3. ICHD-2 criteria for 1.2.1 Typical aura with migraine headache. http://www.neurology.org/content/63/3/427.abstract.*

- You want to confirm that she is not taking combined hormonal contraceptive for contraception purposes.

Why?

- The World Health Organization 2009 (medical eligibility criteria) recommends that the oral contraceptive pill should not be (absolute contraindication) used in women with **migraine with aura at any age**.
- There is an increased risk of ischemic stroke in people with migraine with aura. This risk is increased in women using combined hormonal contraception.

You suggest propranolol for migraine prophylaxis.

How would you assess the effectiveness of the propranolol?

- Headache diary (frequency and intensity of each attack and did they need to go to ER)

When would you review the need to continue this prophylaxis?

- It might take 4-8 wk for substantial benefit to occur.
- If the prophylactic drug provides substantial benefit in the first 2 mo of therapy, this benefit might increase further over several additional months of therapy.
- 6-12 months after the start of prophylactic treatment.

She wants to become pregnant in the future, but still needs migraine prophylaxis, what should you do?

- Migraine without aura often improves during pregnancy. However, migraine with aura is more likely to continue throughout pregnancy.
- Seek specialist advice if prophylactic treatment for migraine is needed during pregnancy,
- Offer pregnant women paracetamol for the acute treatment of migraine.

Case scenario 4

Abdullah is a 31-year-old man. He has a history of severe headaches, which are the worst pain he has ever felt. When he gets these headaches, he has pain on one side of his head, around his eye and along the side of his face. He also experiences watery eye and nasal congestion, on the same side as the headache.

He experienced the headache for the first time 2 weeks ago. The CT scan done was normal and you have been asked to evaluate him. He tells you that, since his first severe headache 2 weeks age, he has experienced 6 more headaches. He says that on average his severe headaches last from 30 to 90 minutes.

Diagnosis: **cluster** headache

The usual scenario we see is that a patient has a severe headache and goes to the ER, they do a CT scan and it is normal so they tell the patient to go follow up in the clinics.

we do not diagnose cluster from one episode →

Table 5. ICHD-2 Diagnostic Criteria for Cluster Headache

At least five episodes fulfilling the following criteria:

- Severe or very severe unilateral orbital, supraorbital, or temporal pain lasting 15 to 180 minutes if untreated
- Headache is accompanied by at least one of the following ipsilateral autonomic symptoms: conjunctival injection or lacrimation, nasal congestion or rhinorrhea, eyelid edema, forehead and facial sweating, miosis or ptosis, restlessness or agitation
- Headache episodes occur from one every other day to eight per day

Not attributable to another disorder

Episodic cluster headache

Fulfills all of the above criteria

At least two cluster periods lasting seven to 365 days and separated by pain-free remissions of more than one month

Chronic cluster headache

Fulfills all of the above criteria

Episodes recur for more than one year without remission periods or with remission periods lasting less than one month

ICHD-2 = International Classification of Headache Disorders, 2nd ed.

Information from reference 4.

What advice and support can you offer about his diagnosis?

- Management primarily pharmacologic
  - Offer 100% O2 or a subcutaneous or nasal triptan for the **acute** management.
- What prophylaxis for cluster headache could you offer him?
  - **Prophylactic** medication: consider offering him verapamil.
- Seek specialist advice before starting verapamil.
- Early specialist referral recommended.

What medication would you **not** offer for the acute management of his cluster headache attack?

- You would **not** offer paracetamol, NSAIDs, oral triptans, ergots or opioids as there is no evidence to suggest that they would have any clinical benefit in the treatment of cluster headache.

NICE: https://www.nice.org.uk/donotdo/do-not-offer-paracetamol-nsaids-opioids-regots-or-oral-triptans-for-the-acute-management-of-cluster-headache

General practice points for managing primary headaches in adults

General practice points for managing primary headaches in adults

- Always rule out secondary headache (ask about neck stiffness, sudden onset, focal neurological signs, trauma).
- Imaging is **not** recommended for the routine assessment of patients with headache with normal neurologic examination findings, and no red flags.
- History and physical examination findings are usually **sufficient** to make a diagnosis.
- Migraine should be considered in patients with recurrent moderate or severe headaches and normal neurologic examination findings.

But remember sinusitis is not a common cause of headache!

Headaches

Sinus:	Cluster:	Tension:	Migraine:
pain is usually behind the forehead and/or cheekbones	pain is in and around one eye	pain is like a band squeezing the head	pain, nausea and visual changes are typical of classic form

General practice points

- Consider a diagnosis of migraine in patients with a previous diagnosis of recurring "sinus" headache.
- Medication overuse is considered when patients with migraine or tension-type headache use combination analgesics,
  - Opioids, or triptans on **≥ 10 d/mo**

    or
  - Acetaminophen or NSAIDs on **≥ 15 d/mo**
- Comprehensive migraine therapy includes management of lifestyle factors and triggers, acute and prophylactic medication, and migraine self-management strategies.

SNOOP (Red flag signs)

Very important: You have to comment about all of these in your notes!

Systemic symptoms	Fever, weight loss, cancer, pregnancy, immunocompromised state
Neurologic symptoms	Confusion, impaired alertness, papilledema, neurologic signs, meningismus, or seizures
Onset	Age > 40 years or sudden, "thunderclap" Some guidelines say 50 and others 40, (اهم شيء) older than 30s
Other associated conditions	Head trauma, headache awakens from sleep, worse with Valsalva maneuvres, precipitated by cough, exertion
Previous headache history	Headache progression or change in attack frequency, severity

Characteristics of migraine, tension-type, and cluster headache syndromes

Symptom	Migraine	Tension-type	Cluster
Location	Adults: unilateral in 60 to 70 percent, Children and adolescents: bilateral in majority	Bilateral	Always unilateral, usually begins around the eye or temple
Characteristics	Gradual in onset, crescendo pattern; pulsating; moderate or severe intensity; aggravated by routine physical activity	Pressure or tightness which waxes and wanes	Pain begins quickly, reaches a crescendo within minutes; pain is deep, continuous excruciating, and explosive in quality
Patient appearance	Patient prefers to rest in a dark quiet room	Patient may remain active or may need to rest	Patient remains active
Duration	4 to 72 hours	30 minutes to 7 days	15 minutes to 3 hours
Associated symptoms	Nausea, vomiting, photophobia, phonophobia; may have aura	None	Ipsilateral lacrimation, redness of the eye; stuffy nose; rhinorrhea; pallor; sweating; Horner syndrome

WARNING SIGNS

Your HEADACHE Could Be Dangerous

Important elements in history: headache for the first time or those with a change in headache pattern

Explore the following important elements:

- Headache onset (thunderclap, head or neck trauma)
  - Previous attacks (progression of symptoms)
  - Duration of attacks (4 hours, continuous)
  - Days per month with headache
- Pain location
- Headache-associated symptoms
- Relationship to precipitating factors (stress, posture etc)
- Effect on work and family activities
- Response to acute and preventive medications
- Presence of coexistent conditions (depression, asthma, etc)

Approach to the physical examination

- Screening neurologic examination (your exam is not complete without fundoscopy = optic disc visualization)
- Neck examination
- Blood pressure measurement
- If indicated, a focused neurologic examination
- If indicated by associated jaw complaints, an examination for temporo-mandibular disorders.

We can use this to convince the pt that they have a benign headache

Table 6. Criteria for Low-Risk Headaches

Age younger than 30 years
Features typical of primary headaches (Tables 1 through 5)
History of similar headache
No abnormal neurologic findings
No concerning change in usual headache pattern
No high-risk comorbid conditions (e.g., human immunodeficiency virus infection)
No new, concerning historical or physical examination findings (Table 7)

Information from reference 6.

Red flags and other potential indicator of secondary headache

Red flags Emergent (address immediately)

- Thunderclap onset
- Fever and meningismus
- Papilledema with focal signs or reduced LOC
- Acute glaucoma

Urgent (address within hours to days)

- Temporal arteritis
- Papilledema (WITHOUT focal signs or reduced LOC)
- Relevant systemic illness
- Elderly patient: new headache with cognitive change

Emergent means **NOW** I have to act and call ER and send the pt to them
Urgent I can wait a day or two but it is still urgent

Possible indicators of secondary headache

- Unexplained focal signs
- Atypical headaches
- Unusual aura symptoms
- Onset after age 50 y

Aggravation by neck movement

- Abnormal neck examination findings (cervicogenic headache)
- Jaw symptoms (consider temporomandibular joint disorder)

yes

Refer and investigate

Guideline for primary care management of headache in adults, Canadian Family Physician

Headache with ≥2 of

- Nausea
- Light sensitivity
- Interference with activities

→ **migraine**

NO

Headache with no nausea but ≥2 of

- **Bilateral headache**
- **Non pulsating pain**
- **Mild to moderate pain**
- **Not worsened by activity**

→ **Tension type headache**

Guideline for primary care management of headache in adults, Canadian Family Physician

Medication overuse

Assess

- Ergots, triptans, combination analgesics, or codeine **≥10 d/mo**

OR

- Acetaminophen or NSAIDs **≥15 d/mo**

Manage

- Educate patient
- Consider prophylactic medication
- Provide an effective acute medication for severe attacks
- Gradual withdrawal of opioids if used
- Abrupt (or gradual) withdrawal of acetaminophen, NSAIDs, or triptans

Table 7. Red Flag Signs and Symptoms in the Evaluation of Acute Headache

Danger sign or symptom	*Possible diagnoses*	*Tests*
First or worst headache of the patient's life	Central nervous system infection, intracranial hemorrhage	Neuroimaging
Focal neurologic signs (not typical aura)	Arteriovenous malformation, collagen vascular disease, intracranial mass lesion	Blood tests, neuroimaging
Headache triggered by cough or exertion, or while engaged in sexual intercourse	Mass lesion, subarachnoid hemorrhage	Lumbar puncture, neuroimaging
Headache with change in personality, mental status, level of consciousness	Central nervous system infection, intracerebral bleed, mass lesion	Blood tests, lumbar puncture, neuroimaging
Neck stiffness or meningismus	Meningitis	Lumbar puncture
New onset of severe headache in pregnancy or postpartum	Cortical vein/cranial sinus thrombosis, carotid artery dissection, pituitary apoplexy	Neuroimaging
Older than 50 years	Mass lesion, temporal arteritis	Erythrocyte sedimentation rate, neuroimaging
Papilledema	Encephalitis, mass lesion, meningitis, pseudotumor	Lumbar puncture, neuroimaging
Rapid onset with strenuous exercise	Carotid artery dissection, intracranial bleed	Neuroimaging
Sudden onset (maximal intensity occurs within seconds to minutes, thunderclap headache)	Bleeding into a mass or arteriovenous malformation, mass lesion (especially posterior fossa), subarachnoid hemorrhage	Lumbar puncture, neuroimaging
Systemic illness with headache (fever, rash)	Arteritis, collagen vascular disease, encephalitis, meningitis	Blood tests, lumbar puncture, neuroimaging, skin biopsy
Tenderness over temporal artery	Polymyalgia rheumatica, temporal arteritis	Erythrocyte sedimentation rate, temporal artery biopsy
Worsening pattern	History of medication overuse, mass lesion, subdural hematoma	Neuroimaging
New headache type in a patient with:		
Cancer	Metastasis	Lumbar puncture, neuroimaging
Human immunodeficiency virus infection	Opportunistic infection, tumor	Lumbar puncture, neuroimaging
Lyme disease	Meningoencephalitis	Lumbar puncture, neuroimaging

Information from references 5, and 20 through 24.

The doctor went through this table in detail and DID **not** skip it

What is this?
Temporal arteritis.

What to do for temporal arteritis?
ESR + biopsy

What to give them?
Steroids.

SORT: KEY RECOMMENDATIONS FOR PRACTICE

Clinical recommendation	*Evidence rating*	*References*
A diagnosis of migraine is highly likely with presence of headache with nausea, or if the patient reports experiencing two of three features from either of these symptom triads: nausea, photophobia, or pulsating pain; or nausea, photophobia, or a headache that worsens with exertion.	C	15
Head computed tomography should be performed before lumbar puncture in all patients with suspected subarachnoid hemorrhage, regardless of findings on neurologic examination.	C	23
A patient with sudden onset of severe headache (e.g., patient reporting the worst headache of his or her life, or maximal from initiation, or thunderclap headache) should be evaluated with computed tomography of the head without contrast media.	C	28
Immunocompromised patients with severe headache should be evaluated with magnetic resonance imaging of the head with and without contrast media.	C	28

A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited-quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, go to http://www.aafp.org/afpsort.xml.

At your level you don't have to know this
You just need to know **neuroimaging** (we won't ask you for CT or MRA we'll just write neuroimaging)

Table 8. American College of Radiology Recommendations for Neuroimaging in Patients with Headache

Clinical features	*Recommended imaging modality*
Headache in immunocompromised patients	MRI of the head with and without contrast media
Headache in patients older than 60 years with suspected temporal arteritis	MRI of the head with and without contrast media
Headache with suspected meningitis	CT or MRI of the head without contrast media
Severe headache in pregnancy	CT or MRI of the head without contrast media
Severe unilateral headache caused by possible dissection of the carotid or arterial arteries	MRI of the head with and without contrast media, MRA of the head and neck, or CTA of the head and neck
Sudden onset or severe headache; worst headache of the patient's life	CT of the head without contrast media; CTA of the head with contrast media, MRA of the head with or without contrast media, or MRI of the head without contrast media

CT = computed tomography; CTA = computed tomographic angiography; MRA = magnetic resonance angiography; MRI = magnetic resonance imaging.

Information from reference 28.

Medication overuse headache (MOH)

- Also called analgesic rebound headache
- Consider a diagnosis in patients with headache on ≥15 d/mo
- Possible medication overuse; use of triptans, ergots, combination analgesics, or opioid-containing medications on ≥ 10 d/mo, or use of acetaminophen or NSAIDs on ≥ 15 d/mo
- MOH appears to be highest with opioids containing combination analgesics, and aspirin/acetaminophen/caffeine combinations.
- The risk with triptans is considered intermediate
- The risk is lowest with NSAIDs

Diagnosis of medication-overuse headache

- When medication-overuse headache is suspected, the patient should also be evaluated for the presence of the following:
  - Psychiatric comorbidities (may also have anxiety or depression)
  - Psychological and physical drug dependence
  - Use of inappropriate coping strategies.

Coping strategies for headache

- Rather than relying on medication as a main coping strategy, patients with suspected medication overuse might benefit from training in and development of more adaptive self-management strategies (eg, identification and management of controllable headache triggers, relaxation exercises, effective stress management skills, and activity pacing)
- Headache diaries that record acute medication intake are important in the prevention and treatment of medication-overuse headache.

Management of MOH – patient education

- Acute medication overuse can increase headache frequency
- When medication overuse is stopped, headache might worsen temporarily and other withdrawal symptoms might occur
- Many patients will experience a long-term reduction in headache frequency after medication overuse is stopped
- Prophylactic medications might become more effective

Strategy for cessation of medication overuse

- Abrupt withdrawal should be advised for patients with suspected medication overuse headache (MOH) caused by simple analgesics (acetaminophen, NSAIDs) or triptans.
- Gradual withdrawal should be advised for patients with suspected medication-overuse headache caused by opioids and opioid-containing analgesics.
- Patient follow-up and support
- Medication overuse headache leads to rebound headache SO we discontinue all medication BUT when we first do that they will have withdrawal symptoms so we have to inform the pt what to expect.

Tips to remember

- A thorough history is the most important way to differentiate among the different causes of headache, which are many.
- A useful mnemonic for the symptoms of migraine headache is POUND. P indicates a pulsatile quality of headache. O indicates 1-day duration (<4 hours suggests TTH). U indicates unilateral location. N indicates the presence of nausea or vomiting. D indicates a disabling intensity.
- Medication-overuse headache should be strongly considered in patients who may be overusing narcotic or barbiturate-containing analgesics, which result in a refractory daily or near-daily headache.
- The overuse of triptan drugs (more than 3 days a week, for 2 or more weeks) is now becoming a common cause of medication-overuse headache.

Tips to remember

- It is important to assess for alarm features that suggest headache due to a secondary, nonbenign cause.
- There are serious causes of headache that exist and for which neuroimaging may be normal.
- For migraine treatment, codeine, and other narcotics, has a high potential for “rebound” headaches and opiate dependence and should generally be avoided.
- It is important to note that triptans do not have a class effect; therefore, lack of efficacy or intolerance of side effects to 1 triptan does not predict a patient’s response to other triptans.
- Triptans are contraindicated in patients with CAD or uncontrolled hypertension.
- Preventive migraine treatment should be considered in patients with frequent disabling migraine headache (> 2 per month), and may reduce the frequency by one third to one half.

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Thank you!

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