Patient Name:	ULI:	Date of Referral:

CONFIRMATION: **Referral Received**

TRIAGE CATEGORY: **Enhanced Primary Care Pathway: Headache and Migraine**

REFERRAL STATUS: **CLOSED**

Dear Colleague,

The clinical and diagnostic information you have provided for the above-named patient is consistent with migraine.

Based on a full review of your referral, it has been determined that further assessment and/or management of this patient is best done within the medical home. The attached Enhanced Primary Care Pathway is recommended to assist you in this assessment.

This clinical pathway has been co-developed by the Calgary Zone Primary Care Networks in partnership with the Section of Neurology and Alberta Health Services. These local guidelines are based on best available evidence and local practices. This package includes:

1. A focused summary of headache diagnosis and migraine management relevant to primary care.
2. A flow diagram and 10 step outline with expanded detail to guide your diagnosis and management of migraine within the medical home.
3. Links to additional resources for patients and physicians, including a headache diary.

It is understood that migraine diagnosis and management is complex and this Enhanced Primary Care Pathway is meant to be covered over several visits. Also, this management may be assisted by engaging other members of the multidisciplinary team.

This referral is CLOSED.

Suspicion of secondary headache, cluster headache and trigeminal neuralgia OR migraine treatment that has failed more than 2 triptan trials and/or more than 2 preventative treatment trials requires a referral to neurology.

Opioids (including codeine alone) should NEVER be used for treatment of migraine. If you suspect medication overuse, basic patient education and an attempt of withdrawal must be tried prior to neurology referral.

If you complete this Enhanced Primary Care Pathway and this patient still requires referral, a new referral indicating "new information" or "completed care pathway" should be faxed to Neurology Central Access and Triage at: 403.476.8711. Please include a list of current medications, as well as previous medications that have been tried. Also, indicate if there has been a history of trauma or regular narcotic use.

If you would like to discuss this referral with a Neurologist please call Specialist Link, a phone consultation service, available 08:00-17:00 weekdays at 403.910.2551 or toll-free at 1.844.962.5465.

Thank you,

Central Access and Triage
Section of Neurology
Department of Clinical Neurosciences

Enhanced Primary Care Pathway: Headache and Migraine

1. Focused summary of Headache Diagnosis and Migraine Management

You can make a significant difference in the quality of life of a migraine patient.

Migraine is prevalent and disabling. It is the THIRD most common disorder in the world according to WHO (the first is dental caries and the second is tension type headache). Migraine (combined with medication overuse headache) is the SECOND most disabling disorder for Years Lost to Disability, because it affects so many people over a long period during their productive years. Chronic migraine, in particular, can be very disabling. Despite this, migraine is underdiagnosed and insufficiently treated. Many patients spend years without a diagnosis, proper self-management education and appropriate treatments. Many fall into the vicious cycle of medication overuse.

Migraine is the most frequent diagnosis made when a patient seeks advice for recurrent disabling headaches (tension type is more prevalent but less disabling). Many terms like "sinus headache", "neck headaches", "stress headaches" often correspond to migraines with a specific trigger. However, it is important to rule out other causes of headache and headache diagnosis is not easily summarized. This pathway gives some basic advice for secondary headache screening and migraine diagnosis, but focuses on **migraine management**. References are provided at the end.

This pathway is long as there are many steps to manage migraine. Remember that you do not need to address every aspect during the first visit. Migraine is a chronic disorder and may require multiple adaptations of lifestyle and medication trials over time. Migraine frequency fluctuates. There will be good periods and bad periods, sometimes with an obvious trigger, sometimes not. Patients must understand this. There is no quick fix, no one-size-fits-all approach. Some patients are easy to help, others are very refractory. But there are many options to help your patient to manage migraine.

Management of migraine during pregnancy and migraine in children and teens are not covered in this summary.

Post-traumatic headache (PTH) may present with a migraine phenotype and many concepts of migraine management can apply. In general, PTH is associated with many other symptoms (emotional, cognitive, vestibular, musculo-skeletal) and carries a worse prognosis.

Specific questions can be discussed with a neurologist by calling Specialist LINK (www.specialistlink.ca), a phone consultation service, available 08:00-17:00 weekdays at 403.910.2551 or toll-free at 1.844.962.5465.

Canadian Headache Society Guidelines for the management of migraine (acute, preventive and in the ED setting) can be found at: www.headachesociety.ca – Publications – Guidelines

2. Clinical Flow Diagram to Guide Your In Clinic Review of this Patient with Expanded Detail

This AHS Calgary Zone pathway has been developed with consideration of guidelines. **The following is a best-practice clinical pathway for headache diagnosis and migraine management in the primary care medical home that includes a flow diagram and expanded detail:**

An algorithm for headache diagnosis and migraine management

1: Red Flags: screen for secondary headaches (Page 4) → **Refer to Neurology Referral Pathway for urgent and emergency Neurology choices**
Use SNOOPPP

2: Targeted investigations (Page 4)
The Choosing wisely campaign recommends NOT ordering imaging for patients with a clinical diagnosis of migraine or tension-type HA, no red flags and a normal neurological exam.
Some secondary headaches are not diagnosed with imaging

3: Confirm the diagnosis of migraine (Page 5)
Typical features for diagnosis (nausea, sensory hypersensitivity) +/- aura,
Estimated frequency (episodic vs chronic)

4: Review medications and lifestyle (Page 6)
Previous trials, overuse detection (** opioids)
Sleep, Pacing, Exercise, Triggers, Diet

5: Identification and optimized management of co-morbidities (Page 6)
Medical (vascular, inflammatory, sleep apnea, other pain syndrome)
Psychiatric

6: Explain diagnosis to patient and clarify expectations (Page 6)
Patients need to understand Migraine diagnosis in order to optimize self-management
Set up realistic expectations: migraine is managed, not cured

7: Explain and use headache diary (see example – Page 16 & 17)
Migraine may be episodic (<15d/month) or chronic (>15d/month for 3months or more)
The Headache Diary is pivotal for migraine management

8: Plan for tailored behavioural interventions (Page 8 & 9)
Based on lifestyle review (sleep, diet, pacing, relaxation, triggers, overuse)

9: Therapeutic options for acute migraine (Page 10 & 11)
Less severe attacks may be controlled with NSAIDS or triptan monotherapy
Treatment should be initiated when the pain is still mild
If monotherapy fails, then combination treatment is warranted
Consider parenteral options (nasal sprays, injectors, suppositories)
Avoid opioids (including codeine)

10: Preventive treatment to reduce frequency of migraine headaches (Page 12 & 13)
Consider if greater than 6 days of headaches per month or disability despite acute meds.
Aim for 50% improvement in frequency and severity of migraines
Tailor treatment choice according to co-morbidities
Optimal dose must be reached, side effects may be tolerated
Re-evaluate prophylactic treatment yearly with the help of headache diary
Some patients are refractory to all preventives

11: Medication Overuse: detect and withdraw (Page 14)
Overuse is frequent with chronic migraine
Withdrawal is a mandatory step if clear overuse is present
Withdrawal should be combined with a preventive
Withdrawal may not result in an improvement in headache in 30% of cases

12: Consider referral to neurology (Page 15)
Suspicion of secondary headache, Cluster headache or trigeminal neuralgia
Migraine having failed >2 triptans and >2 preventive treatments

1. Red Flags: screen for secondary headaches

The SNOOPPPP algorithm summarizes red flags that raise the suspicion of a secondary headache.

Table 1: SNOOPPPP

S	Systemic symptoms or signs	History of cancer, immunosuppression, weight loss, fever
N	Neurological symptoms or signs	Weakness, sensory deficits, speech difficulty, visual problems, cognitive loss (does not include symptoms fitting criteria for a typical aura).
O	Onset	Explosive headache, thunderclap Progressive, worsens over days or weeks
O	Older	Any new headache after 50 years old
P P P P	Previous Progression Postural Pregnancy	A headache different than «usual» Progressive, worsens Postural: worse when standing or lying down Pregnancy, post-partum

2. Targeted investigation

The Choosing Wisely campaign recommends NOT ordering imaging for patients with a clinical diagnosis of migraine or tension-type HA, when there are no red flags and a normal neurological exam.
If a red flag is present, then a working diagnosis should be established. Avoid random imaging.

Table 2: Remember that a CT scan does NOT exclude all secondary headaches:

	Test needed
Post-traumatic headache * Refer to Chronic Pain Center	History is KEY: link between trauma and HA Even if the phenotype is migrainous, please diagnose as post-traumatic in your referral.
Medication Overuse Headache	Headache diary and history Improvement after withdrawal
Sleep apnea (morning headaches)	Polysomnography Treatment may significantly improve headache

3. Is it migraine or something else?

The following are key elements for diagnosis of primary headaches including migraine. These distinctions are important, as management will vary depending on the type and frequency of headache that is present. This table is more exhaustive than official criteria. The TOP diagnosis algorithm is a useful reference.

Treatment of cluster headache is not addressed in this pathway, as **any patient with cluster headache should be referred to neurology and will be prioritized.**

Table 3: Clinical description and comparison of primary headaches

ALL RED FLAGS ARE EXCLUDED and basic neuro exam is normal. Attacks have occurred many times and are stereotyped.			
	Tension Type	**Migraine**	**Cluster headache**
Sex	F = M	3-4 F / 1M	3-4 M / 1F
Location	Often bilateral May involve jaw and neck (myofascial)	Often unilateral, may progress to holocephalic Fronto-temporal (V1) typical Neck pain 60% "Sinus headache"	Unilateral Fronto-temporal, focus on the eye. May involve jaw, neck, teeth.
Character	Tightness, vice-like Pressure Not throbbing	Throbbing is suggestive but may be non-throbbing	Hot poker or knife Pressure on eyeball
Severity	Mild-moderate Usually not severe	Moderate to severe Frequently disabling	Severe to excruciating Ideas of suicide during attack
Other symptoms	May have mild photo OR sono phobia NO nausea NO aura Can be improved by physical activity and distraction	Aura (20%) Nausea/ vomiting Photophobia Sonophobia Osmophobia Increased by activity Difficulty to concentrate Vestibular sx	Ipsilateral to pain: Lacrimation Ptosis Rhinorrhea Miosis Lid edema Restlessness, pacing, rocking May have nausea, photophobia
Duration	Hours, days (not specific)	>4h to many days (status)	30 min to 3h
Frequency	Highly variable. Chronic form very rare.	Episodic = <15 days per month Chronic > 15 days per month	1/2 day to 8/day Circadian rythm Alternance of «bouts» and remission
Triggers	Stress is common	Multiple triggers	Sleep, neck posture Alcohol
What to do	Usually managed in primary care	Managed in primary care, refer to neurology according to criteria	Should be referred to neurology

4. Review lifestyle and previous medications

This step is essential to plan the behavioural and pharmacological interventions. Review previous behavioural attempts, acute treatments, preventive trials, hormonal interventions, procedures, and psychiatric medications.

During your follow-up, it can be wise to keep track of trials on a summary sheet to avoid losing time reviewing notes over years. It also makes referral easier to send to Neurology.

5. Identification and management of medical and psychiatric comorbidities

What makes migraine management difficult is the constant interaction between the brain and the metabolic and mental state of the individual. Comorbidities cannot be ignored, as they can influence migraine severity and the choice of medications. For example, the treatment of sleep apnea can significantly improve migraine.

6. Explain the diagnosis to the patient and clarify expectations

Patients suffering from migraine are often stigmatized and told that "it's all in their head". This leads to more suffering and is not proactive. Education is key to better coping and self-management. A good explanation may save useless imaging. Legitimize, but don't dramatize. Explain the importance of a tailored plan. The migraine patient needs to understand the three axes of migraine management: behavioural, acute and preventive. They need to know that migraine will not be cured and that it is a highly variable disease (symptoms, triggers, response to treatment, prognosis).

Links to additional resources	
For physicians:	Canadian Headache Society: www.headachesociety.ca
	Online tool to take a headache history: www.bontriage.com
For patients:	Canada: www.migrainecanada.org (download diaries)
	Facebook: - Migraine Warriors (private support group in Calgary) - Migraine Canada
	Blog: www.thedailymigraine.com
	USA: www.americanmigrainefoundation.org
	UK: www.migrainetrust.org
	Quebec: www.migrainequebec.com
	Community: www.migraine.com
	To learn from experts: www.migraineworldsummit.com
	Cluster Headache: - https://clusterbusters.org - https://ouchuk.org

7. Train the patient to use a headache diary and use it to monitor progression

The headache diary is the cornerstone of migraine management.
Imaging is not helpful for migraine, but a diary is (and does not cost money).
Diaries are NOT very helpful for patients with a 24/7 persistent headache.
Apps (Migraine Buddy, iHeadache) are difficult to use for clinicians. Most headache experts in Canada do not use them. Patients may use them, but transcribe their results for the follow-up visit.

Initial investment in patient explanation will save you time later for follow-ups.
If you ask a patient to fill a diary, you must look at it at the follow-up appointment.
It may take two repeats to get the patient to fill diaries. Some patients will never fill them, but those who do will be empowered and easier to monitor.

The goals of the headache diary are to:

a. Establish the frequency of headaches of different severity
b. Detect patterns and triggers
c. Observe the frequency of aura
d. Diagnose menstrual migraine (link with cycle is overestimated by many patients)
e. Monitor the frequency of acute medication intake, prevent medication overuse
f. Observe the efficacy of acute medications (attack control success rate)
g. Determine the efficacy of prophylactic treatments (decrease in intensity and frequency of attacks). Some improvement may be subtle at the beginning.

The /10 VAS pain scale is not very useful for migraine monitoring as there are many other symptoms that impact function. The headache diary may be filled using the **0-1-2-3 approach**. Patients tend to understand this very well.

- 0 is a headache-free day
- 1 is a mild headache that does not impair activities and usually has no migrainous features
- 2 is a moderate migraine, but patient may still function
- 3 is a severe migraine usually requiring bedrest
- Days of missed work or bedrest due to migraine may be tagged with a star * next to the coding.

When you do your follow up, using this way of categorizing headaches is very helpful.

The patient should record the treatment used for each attack with the following codes:

- F = failure
- S = success (able to return to activity in 1-2h)
- P= partial benefit
- R= recurrence (initial success but headache comes back the same day)
- E = side effects

Be aware that migraine frequency may fluctuate significantly from one month to the other.
Do not modify preventives for 1-2 bad months.

Download headache diaries from: www.migrainecanada.org
Headache diary and instructions for patients can be found at the end of this pathway.

8. Plan for tailored behavioural interventions

Patients have to understand first why it is important to make changes in their lifestyle. Then, they must determine how to apply theoretical concepts to their personal routine (skill) and then incorporate new habits in the long term (practice).

Brief information (explanation in the office, PDFs, web references) will often not be sufficient to induce concrete change. Regular follow-up with a health care professional will sometimes be necessary. This may be accomplished by engaging a multidisciplinary team member or referring the patient to private professional help.

Remember that many chronic migraine patients still remain severely affected despite ideal behaviour and that migraine is a real disease that is not caused only by stress or other lifestyle aspects.

Sleep:
Sleep hygiene and routine is extremely important for migraine management.
The following behavioural changes on sleep have been shown to improve migraine:

1. Schedule a regular sleep routine that allows 8 hours time in bed but avoids staying awake in bed for more than 20-30 minutes.
2. Eliminate TV, reading, screens, work in bed
3. Use relaxation techniques to shorten time to sleep onset (breathing, body scanning, visualization).
4. Move supper ≥4 hours before bedtime; limit fluids within 2 hours of bedtime
5. Discontinue naps during the day (most people with insomnia spend more time in the bed than they should).

Nutrition:
There is no unique proven diet for migraine. Anecdotal evidence is reported for elimination diets (stopping all possible triggers and reintroducing them one by one), gluten-free, lactose free, modified ketogenic and FODMAP diets. Food triggers tend to be overestimated and are not universal, but some patients are very sensitive to specific triggers. In certain cases, it is best to focus on other factors than diet. The impact of skipping meals (especially breakfast) is underestimated. Increasing protein intake and reducing rapidly absorbed carbohydrates and processed foods is advisable. Nutraceutical supplements are described in the preventive section.

Hydration:
Improving hydration is often recommended but the evidence to support it is limited. Increasing hydration is still certainly worth a try. According to the Dieticians of Canada, 2 litres per day for a woman and 3 litres for a man should be the target. Water should be prioritized over juices and coffee.

Caffeine:
Excessive caffeine intake (more than 200 mg per day) is a chronification factor. Be aware of sources other than coffee (energy beverages, black tea). Intake should be restricted to less than 200 mg per day (2 cups of filter coffee). If caffeine restriction/cessation does not lead to an improvement, it is probably advisable to maintain the lowest intake possible. Don't underestimate caffeine intake in teens.

Exercise:
Exercise should be part of a healthy living style, and has been demonstrated to decrease migraine frequency. In some patients, exercise may trigger migraines (postural, metabolic and vascular effects). Exercise during a migraine attack is not recommended. The intensity has to be tailored. Some exercises may be adapted. Some activities or postures tend to be difficult for patients with neck pain (running, cycling, yoga). Warm-up/cool down are very important. Proper hydration and nutrition are key. Regular moderate practice should be favoured over exhausting workouts (many patients struggle with this due to current social trends with High Intensity Training and Crossfit). Walking is the easiest thing to do. It can be a good investment to ask the supervision of a professional to adapt the exercises (kinesiologist, physiotherapist, yoga therapist).

Relaxation:
Progressive muscular relaxation, biofeedback, breathing exercises, mindfulness and cognitive behavioural therapy have shown benefit for migraine management. Just telling the patient to "learn how to relax" is not enough. Many techniques can be learned to manage anxiety, but regular practice is the key to success and patients have to engage on the long term. If there is significant psychiatric comorbidity, it has to be addressed specifically.

Pacing:
Pacing refers to the ability to manage physical and mental energy and adapt schedules to avoid attacks. Many migraineurs tend to exhaust themselves, suffer their attack, then try to catch up, triggering the next attack. Managing a busy life with migraine requires significant skills. See Alberta Healthy Living resources.

Acupuncture:
There is support for acupuncture by scientific evidence for migraine prevention. As with any procedure, part of the benefit comes from a placebo response (which can be significant). It is safe and may be used by pregnant women. The treatments have to be regular (once or twice per week) and financially it may be limiting in the long term. It can be a useful tool for exacerbations.

Massage:
Massage may be helpful especially if there is a myofascial component. Benefits are usually short lasting. Massage may trigger a migraine if the pressure on sensitive zones is strong and is better avoided during an attack. It may be a better investment to learn stretching exercises with a physiotherapist than pay for regular massages.

Homeopathy is not recommended for migraine prophylaxis (according to the WHO, there is proof of absence of benefit).

Hyperbaric and normobaric oxygen is not recommended for migraine prevention (insufficient evidence).

There is a myriad of "miracle treatments" for migraine, some of them even surgical (e.g. nerve decompression, daith piercing). The migraine patient should be very wary of any promise of cure. Any intervention can lead to a placebo effect that is not useless, but physicians should advocate for safety and reasonable cost as many unproven therapies have risks and can be expensive.

Cannabis:
The impact of cannabis on migraine is currently unknown. Historical anecdotes do exist but efficacy, safety and long term prognosis have not been studied. The use of cannabis for the treatment of migraine and headache should not be encouraged. More research is needed.

9. Therapeutic options for acute migraine

SPECIAL NOTES ON TRIPTANS

- Triptans can be life changing for a migraine patient and they are cost-effective.
- Triptans are not contra-indicated with SSRIs and SNRIs in monotherapy and usual doses. The risk of serotonin syndrome is very low.
- Eletriptan has been studied at the 80 mg dose and there is no rationale to restrict use to only one dose of 40 mg per day.
- Triptans can be used for migraine with aura, but should be avoided if there is motor aura (ie. hemiplegic migraine. Note: patients with hemiplegic migraine should be referred to neurology).
- There is no cross risk of allergy to triptan if the patient has an allergy to sulfa.
- There is no strict contra-indication to triptans in patients with Raynaud's phenomenon.

Table 4: Acute treatment of migraine

	Name	Brand name	Usual dose
NSAIDs	Acetylsalicylic acid / ASA	Aspirin	1000 mg Suppository 650 mg
	Ibuprofen	Advil, Motrin	400 - 600 mg
	Naproxen Naproxen sodium	Aleve	500 mg 550 mg
	Diclofenac potassium Diclofenac potassium powder	Voltaren Cambia	50 mg 50 mg sachet
	Indomethacin	Indocid	50 - 100 mg Suppository 50 and 100 mg
Triptans	Almotriptan	Axert	12,5 mg 6,25 mg (pediatrics)
	Eletriptan	Relpax	40 mg
	Frovatriptan	Frova	2,5 mg
	Naratriptan	Amerge	2,5 mg
	Rizatriptan	Maxalt	10 mg tab or oral dissolving wafer (PDT)
	Sumatriptan	Imitrex	100 mg tab 20 mg Nasal Spray 6 mg Subcutaneous injection
	Zolmitriptan	Zomig	2,5 mg TAB or rapimelt 2,5 and 5 mg Nasal Spray
Others	Domperidone		10 mg
	Metoclopramide	Metonia	10 mg
	Prochloperazine		10 mg Suppository 10 mg
	Odansetron	Zofran	4 - 8 mg
Narcotics	Narcotics (including codeine alone)		Should NEVER be used for migraine in primary care
	Codeine combined analgesics	T2-3-4 Excedrin Fiornal	15 - 60 mg Use ONLY if ALL other treatments have failed or are contra-indicated. **High risk of chronification, may be harmful to patient.**
	Tramadol	Tramacet	Should NOT be used for migraine

Clinical principles for acute treatment of the migraine attack:

Goal: relief and return to function within 2 hours, with good tolerability and reliability.

Treat early principle: All acute treatments should be taken as early as possible. Delaying acute treatment decreases the chances of success. If the patient has 10 days or less per month of headache, this is an easy rule to follow. If the patient has more than 10 days of headache per month, there is a risk of chronification and overuse. Patients with more than 10 headache days per month may be instructed to avoid treating their milder headaches. This situation is not always clear, as delaying treatments also may lead to failure and longer attacks.

Less severe attacks can be controlled with NSAID or triptan monotherapy.

If monotherapy fails, then combination is warranted. Many patients have 2 types of attacks and may need to tailor their treatment. Attacks difficult to control include:

- Fast rising attacks
- Attacks starting during sleep or upon awakening
- Attack with prominent nausea or vomiting
- Attacks occurring during the menstrual period

If attacks are difficult to control, consider the following approaches:

- Combinations (NSAID + triptan taken early together)
- Use of adjunct therapy (anti-emetics)
- Use of parenterals (nasal sprays, suppositories, injectors)
- Start prophylaxis (may increase efficacy of acute treatments)

Never use opioids for migraine (including combined analgesic with codeine).

Opioids are associated with a high risk of chronification because they cause medication-overuse headache.

Triptans may be costly but they are more effective. If you are at the stage of considering opioids, because you have exhausted everything else, the patient should be referred to neurology. Studies in a highly specialized centre have indicated that 90% of patients who use opiates regularly or as a preventive did not improve, deteriorated, or developed aberrant opioid related behaviour.
Just don't prescribe them.

Triptan forms:
Blue Cross (and other insurance companies) may ask for a special authorization form for triptans. Please take the time to fill out these forms, as triptans are indicated for migraine, and T3s are not.

VIDEOS for patients on Acute Treatment:

You Tube >>> Migraine Canada >>> Videos >>> Acute Treatment
VIDEO for sumatriptan generic auto-injector: www.sumainject.com

10. Preventive treatments to reduce the frequency of migraine

- It is estimated that preventive treatment for migraine is underused. Less than 30% of patients who would be candidates for prevention actually receive prescriptions.
- Most patients with >5 days per month of migraine should be offered a preventive treatment. The decision is made with the patient based on the headache-related disability and impact on function.
- Every chronic migraine patient should be offered preventive treatment.
- Always use a headache diary to monitor the response.
- Chronic migraine patients tend to underestimate their headache frequency because they only count their more severe attacks and not their daily milder headaches.
- Start low, go slow, but increase the dose within the range indicated in Table 5 until there is either a response or side effects.
- Maintain the optimal dose for at least one month (a complete trial could be 1-2 months increase and 1-2 month observation = 3-4 months).
- Aim for 50% improvement in frequency and severity.
- If a preventive does not lead to a clinically significant benefit, taper it down and stop it. There is no evidence that adding a second preventive to an ineffective therapy increases its effect.
- If a preventive is partially effective, it can be kept and another can be added. There is no proof that combining preventives is effective, but in practice most experts do it.
- Patients have to be aware that treatment may be continued for safely for years if efficacious.
- Reevaluate treatment every year, if frequency is below 6 days per month and patient is stable, may wean progressively.
- Do not modify treatment for a brief exacerbation or deterioration attributed to a reversible situation that can be managed behaviourally.
- Consider an adjustment if the frequency is deteriorating for more than 1-2 months without obvious reason or if the causative factor is expected to last (after a trauma, perimenopause, major stressor).
- Instruct patients not to stop their preventive if they were initially stable but then deteriorate. There is probably another cause and stopping the preventive medication could lead to further deterioration of headache management.
- Be aware that compliance with migraine preventives is very low. This is explained by lack of efficacy, partial efficacy, side effects and perception that migraine should not be treated on the long term with medications.
- Supplements can be expensive and difficult to find. Migravent (contains butterbur) and Migrelief (contains feverfew) are two compounds that can be bought online at reasonable cost.
- Botox is indicated for chronic migraine only. It has a 50-60% response rate and a good tolerability profile. Ensure comprehensive management of chronic migraine and a headache diary prior to commencing Botox injections.
- Patients can find a Botox injector with a search with their postal code on the website www.mychronicmigraine.ca >>Find a specialist

Monoclonal antibodies against Calcitonin Gene-Related Peptide (CGRP):
Recent studies have demonstrated the efficacy and tolerability of these injectable treatments. Patients may ask about them. The first compound of this category is expected to be approved by Health Canada in 2018. They will probably be prescribed to refractory patients and by neurologists only.

Table 5: Migraine preventives

	Usual dose	Main side effects	Choose for patients with	Avoid in patients with
Frequently used (*brand name*)				
Amitriptyline *Elavil* Nortriptyline *Aventyl*	10 to 50 mg at bedtime	Weight gain Drowsiness Confusion Urinary retention Constipation	Insomnia Other pain Tension type headache * no effect on depression at lower doses	Overweight Glaucoma Prostate disease Heart block Bipolar disorder Elderly
Propranolol *Inderal* Nadolol *Corgard*	80 to 160 mg qd (slow release or BID)	Fatigue Reduced exercise tolerance Sexual dysfunction Nightmares	Hypertension Anxiety Essential tremor	Raynaud Asthma Heart block Hypotension bradycardia
Candesartan *Atacand*	8 to 16 mg qd	Hypotension Dizziness	Hypertension	Hypotension
Topiramate *Topamax*	50 to 200 mg	Cognitive difficulties Paresthesias Weight loss Kidney stones Anxiety, mania Visual disturbances Glaucoma (rare)	Obesity Epilepsy Essential tremor Chronic migraine	Kidney stones Glaucoma Use with caution in depression/anxiety
Onabotulinum Toxin Type A *Botox*	155 to 195 units SC or IM	Local pain Cosmetic asymmetry Neck weakness (rare)	Chronic migraine only	Neuromuscular disease Coagulation disorders are not a strict contra-indication.
Natural products and supplements				
Magnesium citrate or glycinate	300 mg BID	GI cramps, diarrhea	Constipation	Loose bowel movements, cramps
Vitamin B2 (riboflavin)	400 mg daily	Yellow/orange urine	None	None
Coenzyme Q10	100 mg TID or 300 qd	GI upset	None	None
Butterbur (Petadolex)	75 mg BID	GI (burping)	None	None
Should NOT be first line, less frequently used, low evidence for efficacy but may be used in selected cases with significant comorbidity				
Verapamil *Isoptin*	240 mg qd	Constipation Peripheral edema AV block, fatigue	Hypertension Angina	Constipation Hypotension
Gabapentin *Neurontin*	1200- 2400 daily (divided doses)	Drowsiness Dizziness	Epilepsy Neuropathic pain Insomnia	Kidney failure (dose adjustment)
Venlafaxine *Effexor*	150 -225 mg daily	Nausea, vomiting Nightmares Drowsiness	Depression Anxiety	Hypertension Kidney failure

* Side effects and contra-indications NOT exhaustive. For specific recommendations for pregnancy please refer to other sources. Please consult the product monograph if necessary.

*Valproic acid, flunarizine and pizotifen are not included in this table since they are usually not prescribed in primary care. They have many side effects.

11. Medication overuse: detect and withdraw

*** The best thing is to AVOID opioids in the first place.**

Table 6: Medication overuse detection and withdrawal

Step	
Does the patient have chronic headache?	> 15 days / month Since > 3 months
Determine if overuse is present Evaluate monthly frequency of intake	NSAID OR acetaminophen ONLY: 15 days Any other or mixed: 10 days Many patients underestimate their intake Get a headache diary
Determine comorbidities and factors of severity If many factors present, withdrawal will be more difficult	Anxiety Addiction Other chronic pain Sleep difficulty Long duration of overuse Multiple medications Any opioid or barbiturate Previous attempts at withdrawal
Is overuse likely to cause the chronic headache?	Parallel increase in headache frequency and medication intake Morning headache (rebound) Tension type daily headache in addition to migraine Increase in doses, meds do not work anymore
Explain diagnosis to patient	Education is the very first step * 30% of patients may stop after education only
Prepare withdrawal	Withdrawal has to be planned at a proper time for the patient (impact on work, family, support etc) A sick leave note (7-14 days) may be very helpful.
Choose bridging	Naproxen 500 mg BID is often used Steroids have not been proven to be effective but are sometimes used
Choose preventive	Withdrawal only is very unlikely to be sufficient in most patients. They had frequent migraines to start with. May decide to start preventive BEFORE initiating withdrawal to make sure that the preventive is tolerated.
Decide “cold turkey” vs “progressive”	Cold turkey is reasonable unless the patient uses a more than 20 mg of morphine equivalent daily (100 mg codeine) To avoid opioid withdrawal symptoms, decrease progressively before stopping completely.
Be aware of prognosis In most MOH detox cohorts:	10% will not be able to withdraw (complex patients) 30% will withdraw and NOT improve 50% will withdraw AND improve, but still will have frequent migraines. 10% will have a very significant improvement
Have a plan if withdrawal fails	Start another preventive Refer to neurology

For more details: http://www.isdbweb.org/documents/file/4bbc51289d069.pdf
Article by Tepper et al: Breaking the cycle of medication overuse headache, Cleveland Clinic

12. Referral to Neurology (CAT criteria)

Please refer to the TOP algorithm for headaches other than migraine.

Headache referrals are triaged by neurologists according to CAT criteria:

If you suspect a secondary headache, you may decide to send the patient to the emergency department (e.g. thunderclap headache, neurological deficits) or to the Urgent Neurology Clinic.

If you have not included information on previous medication trials then we are not able to triage the referral and the referral will be sent back. To be seen in Neurology, a patient with migraine must have failed >2 triptans and >2 preventive treatments. If there is medication overuse, basic education of the patient and an attempt of withdrawal must have been tried.
General neurology: less complex cases
CHAMP: more complex cases, cluster headache and headaches with unclear diagnosis.
Chronic Pain Centre: post-traumatic headache

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Headache diary

DOWNLOAD on www.migrainecanada.org
Filling a diary is the best way to make the right decisions about your migraines/headaches.

DON'T FORGET ME!

Month

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	T
Headache 0 1 2 3*																																
Aura																																
Period																																
Lifestyle																																
Tx																																
Tx:																																
Tx:																																
Effect acute tx																																
STABLE Prev																																
NEW prev																																
Notes																																

Number of days for each HA severity				
0	1	2	3	Tot

Total number of days with any acute medication intake

Month

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	T
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STABLE Prev																																
NEW prev																																
Notes																																

Number of days for each HA severity				
0	1	2	3	Tot

Total number of days with any acute medication intake

Quick reminder:

Headache severity: 0 = headache free day 1= mild, can function 2=moderate, slowed 3= severe cannot function * = miss work or personal activity
Effectiveness of acute tx: S = success P = partal benefit F = failure R= recurrence of HA E = side effects

Note: Please see Page 17 for Headache Diary instructions.

INSTRUCTIONS: HOW TO FILL MY HEADACHE DIARY?

The Table:

- **Headache 0-1-2-3*:**
  - Write down your highest headache severity/disability for each day (0= headache free, 1 = mild, 2= moderate, 3 = severe).
  - ADD a star * if you missed work, could not perform your activities or needed bed rest.
- **Aura: if you have auras, track them.** V = visual. S= sensory. M=motor. C = cognitive or speech. Ve = vestibular.
- **Period: if you have menstrual cycles, identify the days of bleeding.** This can be very useful to determine if you have menstrual migraines and adjust your treatment.
- **Lifestyle: instead of writing triggers, put the focus on the protective factors and habits**. E=exercise. S=sleep routine. M =meditation. R=relaxation. Any code you choose is good.
- **Tx = write the names of the acute treatments that you use**. You may use initials (Z=zomig, N=naproxen...) especially if you use many and regroup them by categories (NSAIDs, triptans...)
- **Effectiveness of acute treatment:** if you have treated an attack, what was the result? F=faillure, P=partial benefit, S=success, R=recurrence (pain comes back the same day). E = side effects.
- **Stable Prev:** Write the name(s) of preventive meds that you are already taking with the doses.
- **New Prev:** write the name of the new preventive you are trying and track the dose changes so you can monitor your response.
- **Notes:** use this column to track anything else.

The Summary:

- Write the number of days for each severity level, then calculate a total of headache days per month.
- At the end of the acute tx rows, you have a space to count how many days per month you used this treatment.
- Sum the total number of days where you took ANY acute treatment. This helps to detect overuse.
- Before your appointment, make the counts on your diary sheets.
- Think about the treatments you tried. Were they useful? Do you wish to keep them? Try others?
- Please do not forget to bring your diary to your appointment!
- **Your diary will make your appointment more useful for you.**