

Be Prepared: Making a Migraine Action Plan

Lauren Doyle Strauss, DO, FAHS

UCNS Board Certified Headache Specialist

Assistant Professor in Pediatric Neurology

Director, Child Neurology Residency

Comprehensive Headache Program, Wake Forest Baptist Health

@StraussHeadache



Disclosures

- None



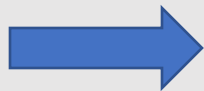
How Common is Headache in Children?

- Most common manifestation of pain
 - 1/3 have recurrent HAs
 - 2 - 6% have daily HAs
- One of the most frequent reasons for neurology referral or ED visits



Pediatric Headache in the ED

- Mean duration of HA prior to ED is 2-3 days
- About 1/3 of pediatric patients may not have tried a medication
 - Most have used non-specific oral analgesic
 - One study showed only 2.2% have tried a triptan, while 4.7% an opioid



Often children are untreated or undertreated



It's Important to Be Prepared

Have you made a Migraine Action Plan?



Know the Terms

- Acute Medication
- Rescue Medication
- Daily Preventive Medication



Overview of Acute Headache Medications

- Analgesics
 - Acetaminophen
 - NSAIDs
 - Ketorolac
- Anti-Emetics
 - Neuroleptics
 - Metoclopramide
 - Prochlorperazine
 - Other
 - Ondansetron
- Combination Medications
- Triptans
- Anti-Histamines
 - Hydroxyzine
 - Cyproheptadine
- Steroids
 - Medrol Dose Pak
- DHE
- Opiates
- Benzodiazepines
- Gepants



Many Triptan Choices

	Time to onset (hrs)	Half Life (hrs)	Bioavailability	Available Preparations	Dosing
<i>Fast Acting Triptans</i>					
Sumatriptan	1.5	2-2.5	14%	Oral	1mg/kg/dose, 25mg (<50mg), 50mg (>50mg)
				Nasal Spray	5mg (<50mg, <9yrs), 10mg (>10-11 ys), 20mg (>50kg, >12yrs)
Zolmitriptan	2	2.5-3	40-48%	Regular/ZMT	2.5mg (<12yrs), 5mg (>12yrs)
				Nasal Spray	5mg (>12yrs)
Rizatriptan	1.2-2.5	2-3	45%	Regular ODT	5mg (<40kg), 10mg (>40kg)
Almotriptan	1.4-3.8	3.2-3.7	70-80%	Oral	6.25mg or 12.5mg or 25mg (>50kg)
Eletriptan	1-2	4-7	50%	Oral	20mg or 40mg (>50kg)
<i>Slow Acting Triptans</i>					
Naratriptan	2-3	5-6	63% (Men), 74% (Women)	Oral	1mg, 2.5mg
Frovatriptan	2-4	24-30	24-30%	Oral	2.5mg



Triptans

- If one triptan fails... try, try another
- ***Simple Rule of 2s:***
 - Repeat in 2 hrs
 - Limit 2 pills/day
 - 2 days/week
 - Do not mix triptans within one day
- ***Side Effects:*** flu-like symptoms, tightness in chest/throat/jaw
- ***Cautions:*** uncontrolled HTN, arrhythmia, history of stroke or heart attack, pregnancy



Combination Oral Medications

- ✓ Caffeine enhances the effect of other medications AND has its own analgesic effects
- ✗ No clinical trial has shown that butalbital has additional anti-H/A effect, but definitely has inc. MOH
- ✗ Careful of aspirin-containing products as they INCREASE risk of Reyes Syndrome in children
- ✗ Careful of adding aspirin-containing products if already taking aspirin

Excedrin Migraine (OTC):

Acetaminophen 250mg
Aspirin 250mg
Caffeine 65mg

Goody Powders (OTC):

Acetaminophen 260mg
Aspirin 520mg
Caffeine 32.5mg

BC Powders (OTC):

Aspirin 845mg
Caffeine 65mg

Midrin:

Acetaminophen
Isometheptene (sympathomimetic)
Dichloralphenazone (choral hydrate derivative)

Fioricet:

Acetaminophen 300mg
Butalbital 50mg
Caffeine 40mg

Fiorinal:

Aspirin 325mg
Butalbital 50mg
Caffeine 40mg



Important Needs/Preferences

- Insurance coverage
- Unable to swallow pills
- Unable to keep pills down due to vomiting
- Needle-phobic
- Sedation concerns at work, home, school



TABLE 2. NONORAL RESCUE MEDICATION OPTIONS

Formulation	Drugs
Liquid	Cyproheptadine
	Metoclopramide
	Naproxen sodium
	Prochlorperazine
Powder	Diclofenac potassium
Chewable/ dissolvable	Ondansetron
	Rizatriptan
	Zolmitriptan
Nasal spray	Sumatriptan
	Zolmitriptan
Injectable	Sumatriptan
Rectal	Indomethacin
Topical	Prochlorperazine
	Diclofenac



Migraine Medications with FDA Approval in Children

Preventive	Topiramate	≥ 12 y
	Topiramate XR	12-17 y
Abortive	Rizatriptan	6-17 y
	Almotriptan	12-17 y
	Zolmitriptan NS	12-17 y
	Combination sumatriptan/naproxen	12-17 y



Acute Headache Treatment Paradigm

- **Stage 1: Simple Analgesic**
 - Acetaminophen, NSAID
- **Stage 2: Simple Analgesic +/- Antiemetic +/- Antihistamine**
- **Stage 3: Try headache-specific medications**
 - Triptans, Gepant
- **Stage 4: Combination treatments: all together**
- Treat Early!!!
- BE AWARE OF MEDICATION OVERUSE HEADACHE
- If headaches lasting > 1-2 hours, need treat with strongest medication first
- Special Advice: Trial new meds when you *don't* have a headache



Discuss with your Provider



- **Acute Medications:**

- When do I use the medications?
- How do I choose which medication?
- Take in combination?
- How long until helpful?
- Side effects?
- How many doses/week?

- **Rescue Medications:**

- When do I use a rescue medication?
- At home or in urgent care/ED?
- Can I repeat them?

- **Prior Medications:**

- Create a list of each medication- document helpfulness/side effects



Migraine Space “Cave”

- Safe Space at home, school, work
- Possible Needs
 - **Private** – sign if needed
 - **Quiet** – ear plugs, headphones, blanket
 - **Dark** – Hat, glasses, draw curtains
 - **Aromatherapy** – Peppermint, Lavender
 - **Hot or Cool Packs**
 - **Neuromodulation**
 - Easy Access: medications, water, electrolyte fluids, bathroom



PedMAP

- School communication is KEY
- Quick access to medications
- Reduce stigma



Pediatric Migraine Action Plan (PedMAP)



Pediatric Migraine Action Plan (PedMAP) Date: _____

Name _____ Date of Birth _____

Treating Provider: _____ Phone: _____

Emergency Contact: _____ Phone: _____


Headache Information

My diagnosis is: _____ Describe aura (if any): _____

Green Zone – Prevent more headaches

Do or take this every day to help prevent YOUR headaches:

It may take 4-6 weeks to see a big change, so stick with it!
Visit www.headachereliefguide.com to manage your headaches.



- Get enough sleep; keep a regular schedule
- Eat healthy foods; don't skip meals
- Drink enough water; avoid caffeine
- Get regular exercise; manage your weight
- Learn ways to relax; manage your stress

Directions to provider: Set 1-2 healthy lifestyle goals. Consider a daily medicine or vitamin/ supplement if > 1 headache per week. Consider Cognitive Behavior Therapy (CBT) if PedMIDAS > 10. To download PedMIDAS, visit <https://www.cincinnatichildrens.org/service/h/headache-center/pedmidas>


Yellow Zone – Don't wait. Act fast to treat your headaches

Go to school nurse or health office right away. Take your quick-relief medicine as soon as your headache starts:

Take _____ Dose _____
Route _____ May repeat after _____ hours.

Take _____ Dose _____
Route _____ May repeat after _____ hours.

Let your provider know if you need to take your quick relief medicines 3 or more days a week or if this plan isn't working.



- Drink some water or sports drink if you can
- Rest in a dark, quiet place for 30 minutes and practice your relaxation exercises (e.g., deep breathing, guided imagery), if you can
- You may need a different PE activity, dark glasses, or a quiet place to work for a while


Directions to provider: Goal is pain-free within 1-2 hours for intermittent headaches and back to baseline for constant headaches. Consider NSAID +/- antiemetic, a triptan or a combination of medications.

Directions to provider: Optional section for other scenarios, step 2 or a "backup" plan. Home "backup" plan: Consider dopamine blocker +/- diphenhydramine +/- NSAID.

Red Zone – Time to get more help

Contact your provider's office if:

- Your headache is much worse, lasting much longer than usual
- Go to the Emergency Room if:
- You have new and very different symptoms like loss of vision, unable to move one side of your face or body, trouble walking or talking, very confused or unable to respond



- Call 9-1-1 if child loses consciousness or has stroke-like symptoms

Directions to provider: Avoid giving aspirin to children < 16 years old. Avoid giving opioids or butalbital for pain.

I authorize the quick-relief medication(s) listed in the Yellow Zone:

Provider's Signature _____ Date _____ to be administered by school personnel

Parent/Guardian's Signature _____ Date _____ to be self-administered by student

to be administered only by parent

Migraine Action Plan (MAP) Expiration Date _____

Name: _____ Date of Birth: _____
Treating Physician/Provider: _____ Phone: _____
Emergency Contact: _____ Phone: _____
Significant Medical History: _____

HEADACHE INFORMATION

Headache Diagnosis (Select Applicable): Migraine without Aura Migraine with Aura Trigeminal Neuralgia
 Cluster Headache New Daily Persistent Headache Post-Traumatic Headache _____ _____
Aura Type: _____ **Length:** _____ **Description:** _____

Daily Preventive Medications: Take these medications every day (whether you have a headache or not)

HOME ACUTE TREATMENT PLAN:

Take the following steps at the start of a moderate to severe headache:

- If you are able to, go to a quiet, cool, dark room and lay down.
- If able, consider drinking fluids such as water or electrolyte-containing fluids.

Take these medications:

○ **Step 1: Please take at the start of the headache (select options, circle medications)¹**

- Over the counter medications (OTC):** acetaminophen, ibuprofen, naproxen
Instructions: ___ mg, oral. Repeat in ___ hours
- Triptan:** sumatriptan, rizatriptan, zolmitriptan, eletriptan, almotriptan, frovatriptan, naratriptan
Instructions: ___ mg, melt in mouth/oral/nasal spray/injection. Repeat in ___ hours
Side Effects: flu-like symptoms, fatigue, headache, facial flushing, throat tightness
Do not mix triptans together. Limit 10/month.
- NSAID:** ibuprofen, naproxen sodium, ketoprofen, diclofenac
Instructions: ___ mg, oral/powder/apply to skin. Repeat in ___ hours
Side Effects: upset stomach, best if taken with food
- Anti-Nausea:** metoclopramide, prochlorperazine, ondansetron, promethazine
Instructions: ___ mg, oral/melt in mouth/apply to skin. Repeat in ___ hours
Side Effects: fatigue, dizziness, muscle stiffness. If having muscle stiffness, take diphenhydramine (Benadryl)
- DHE:** Dihydroergotamine mesylate
Instructions: ___ mg, nasal spray. Repeat in ___ hours
Side Effects: flu-like symptoms, fatigue, headache, facial flushing, throat tightness
- Medication:** _____
Instructions: ___ mg, oral/melt in mouth/apply to skin. Repeat in ___ hours
Side Effects: _____

○ **Step 2: If you are still in pain, consider taking:**

- Medication:** _____
Instructions: ___ mg, oral/melt in mouth/apply to skin. Repeat in ___ hours
Side Effects: _____

**If side effects are new or medications are ineffective, report to prescribing provider. If having fatigue, avoid driving or operating heavy machinery. If having trouble breathing or persistent chest pain, report to emergency room.*

Patient/Guardian Signature _____ **Date:** _____

Treating Physician Signature _____ **Date:** _____

Migraine Action Plan

- Diagnosis
- Medical Contacts
- Usual Symptoms
- Acute Treatment Plan



Peretz, Headache, 2018

Migraine Action Plan

- When should I be worried?
- What is MY Rescue Plan?
 - When do I launch it
 - What if home rescue doesn't work
 - Where do I go for more care
 - What medications do I avoid
- Ask ED, what are they treating with?



Peretz, Headache, 2018

Migraine Action Plan (MAP)

Expiration Date _____

HOSPITAL RESCUE PLAN:

There are certain circumstances when you should consider going to an Urgent Care Clinic or Emergency Room. Please show them this form for recommended medications to treat your severe headaches.

Reasons to go to Urgent Care or the Emergency Room:

- Severe nausea and/or vomiting and an inability to eat food or drink water
- A new or different headache
- Headache is typical but severe and not responding to home rescue plan
- New symptoms that are not typical for your headaches (for example: weakness, visual loss, vision changes, trouble walking, trouble talking, etc.)
- You are pregnant and headache is different, severe and/or persistent

Treatment Options: The Emergency Room or Urgent Care physician will determine which treatment option is safest and most appropriate for you. If you are pregnant or think that you could be pregnant, let someone know.

- Please avoid the following medication(s) because of medical contraindication/side effect/interaction/abuse history:
 Triptan, DHE, NSAID, anti-emetic, steroid, opiates, _____, _____
 Reason(s): _____

Step 1:

- IV Fluids:* Consider D5 1/4 NS
- NSAID:* IV/IM ketorolac (Level C Recommendation)² 0.5 – 1.0 mg/kg (max 30 mg IM, 15 mg/kg IV) as needed every 8 hours
- Anti-emetic:* IV prochlorperazine (Level B Recommendation)² 0.15mg/kg (max 10mg), IV metoclopramide (Level B Recommendation)² 0.18 mg/kg (max 10mg), or IV/ODT ondansetron 4mg or 8mg
- Triptans:* SC sumatriptan (Level B Recommendation)² 4mg or 6mg

Step 2: Consider other treatments, however, be aware that this category has less supportive evidence and greater potential adverse effects. Consider consulting headache medicine or neurology service for further guidance.

- Steroids:* dexamethasone 4mg or 8mg IV (Level U Evidence for acute attack, Level B Recommendation for prevention of recurrence)²
- Dihydroergotamine (DHE-45) (Level U Recommendation)² Take with anti-emetic agent. Relative risk when given within 24 hours of triptan
- Anti-epileptic:* IV push valproic acid (Level C Recommendation)² 500mg
- Anti-emetic:* IM promethazine (Level U Recommendation)² 12.5mg or 25mg. Avoid IV administration in an insecure line given possible intra-arterial ischemia
- Magnesium Sulfate (Level U Recommendation)² 1-2gm IV
- Occipital Nerve Block
- Medication: _____
- Medication: _____

Medications to AVOID: These medications can potentially make migraines worse and consider avoiding.

- Opiates³ (hydrocodone-acetaminophen/norco or vicodin, oxycodone-acetaminophen/percocet, hydromorphone/dilaudid, morphine/MS contin and roxanol, meperidine/demerol, tramadol/ultram, fentanyl/duragesic, codeine-acetaminophen/tylenol #3)
- Butalbital containing products (Fioricet, Fiorinal, butalbital/caffeine/codeine)
- If < 16 years, avoid aspirin-containing products given risk of Reyes syndrome

Provider Resources

1. Silberstein SD et. al. Practice parameter: evidence-based guidelines for migraine headache (an evidence-based review): report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology*. 2000 Sep 26;56(8):754-62.
2. Recommendation levels based on value of benefit relative to risk: A (Must recommend); B (Should), C (May), U (None)
 Orr SL, Friedman BW, Christie S, Minen MT, Bamford C, Kelley NE, Tepper D. Management of Adults With Acute Migraine in the Emergency Department: The American Headache Society Evidence Assessment of Parenteral Pharmacotherapies. *Headache*. 2016 Jun;56(6):911-40. doi: 10.1111/head.12835.
3. CDC Guideline for Prescribing Opioids for Chronic Pain: www.cdc.gov/drugoverdose/prescribing/guideline.html

Patient/Guardian Signature _____ **Date:** _____

Treating Physician Signature _____ **Date:** _____

American Headache Society · www.AmericanHeadacheSociety.org

To cite this article please use the following citation:

Peretz, A.M., Minen, M. T., Cowan, R. and Strauss, L. D. (2018), Migraine Action Plan (MAP). *Headache: The Journal of Face and Pain*, 58: 355-356. doi: 10.1111/head.13255

Making a Headache Diary

- The Diary is FOR YOU
- What should I track?
 - Intensity Number
 - Periods
 - Acute and Rescue Medications
 - Changing of Daily Medications

MONTH Oct 2011

BRIEF INSTRUCTIONS

Use this calendar to record any headaches you have. This will help the doctor measure the success of your treatment.

Begin by filling in the month and all the right days for that month.

For each day, record:

- * Number of headaches
- * Description of headache, time of on-set, duration, severity & location of headache.
- * Any possible trigger factors for headache.

You should also record:

- * Any medication taken and when.
- * Any other treatment used for headache.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
2	3 11 pm 2 bena 1 comp	4	5	6	7 3 pm 2 vic 7:30 am vic Flying	8 3 morning 2 ben evening 2 ben
9	10 7 am zof 3 pm vic 3 pm vic	11	12	13	14	15
3	4 2 vicodin 11:55 pm 1 lex 11:30 massage	2	5-6 2 aberax 3 1 comp x 2 no lex	4 → 6 2 vic @ 12 2 relieve @ 11 lex x 2 @ 11	4 1 comp 2 bena @ 11 2 bena @ 11	2 2 bena aft
16	17 2 exhausted	18	19	20	21	22
2 → 5 → 6 11 pm in that 2 bena x 2 night	2	18 BOTOX	2	5 → 1 Zofran	1	3 → 2 → 3
23	24	25	26	27	29	29
2 11 am zof 2 bena	2 11 am zof 2 bena	2 → 1 11 am zof 2 bena	1	1	1 Flying driving	3 10 am relief morning Zofran
30	31					
2	1					



Be Prepared for Your Next Migraine

- Have a conversation with your treating provider
- Know your medication options
- When should you take them
- When and where should you seek out more care

