Top Ten Ways You Can Help Manage Pediatric and Adolescent Headache

Marc DiSabella, DO
Program Director, Pediatric Neurology Fellowship
Director, Headache Program
Assistant Professor, Child Neurology
Children's National Health System

Disclosure:
Support from Impax Zolmitriptan clinical trial.
Support from Amgen Aimovig clinical trial.

Angela Fletcher, PsyD
Program Director, Behavioral Pain Medicine
Assistant Professor, Psychology & Behavioral Health
Children's National Health System
Objectives

• Discuss evidence based strategies for management in pediatric and adolescent primary headache disorders

• Provide steps primary care physicians can take to co-manage headache

• Discuss recommendations for referral to the Headache Program at Children’s National
Headache is Common

Migraine without aura – 20-28% of adolescents
  • ICHD-II definition

Chronic daily headache - 2-4% of adolescents
  • Defined as >15 headaches per month > 3months
  • Arch Pediatr. 2008 Dec;15(12):1805-14

Chronic migraine - 1% of adolescents
  • Defined as >15 migraines per month > 3months
  • Headache. 2011 May;51(5):693-706.

Medication overuse headache - 1.75% of adolescents
  • Defined as >15 headaches per month in setting of abortive medication use > 15 days per month > 3months
  • Headache. 2011 May;51(5):693-706.
Top Ten Ways to Prevent and Treat Headache

1. Hydration
2. Exercise and Desensitize
3. Sleep
4. Eat
5. Prevent Headaches
6. Use Rescue Medications Appropriately
7. Utilize Cognitive Behavioral Therapy
8. Provide Education, Assurance, and More Education
9. Help Parents with Coping and Coaching
10. Daily School Attendance
Pathophysiology of Migraine –
The Theory of the Starving Brain
Rule #1 - Hydrate
Hydration

• Goal hydration
  • Typically 60-100 oz fluids per day
  • Weight in pounds = Number of ounces (max 100oz/day)
  • Avoid caffeine and artificial sweeteners

• Etiology
  • Blood volume, cardiac output
  • “Fire hose” analogy
  • Energy crisis

• Headache associated with dehydration:
  • Ramadan fasting (Awada and al Jumah, 1999)
  • Alcohol hangover (Wiese et al., 2000)
  • Altitude sickness (Coote, 1995)
  • Heat illness (Eichner, 1998)

• Multiple randomized, placebo-controlled trials suggesting improvement in quality of life, headache frequency, and headache severity
  • European Journal of Neurology 2005, 12: 715–718
  • Family Practice 2012; 29:370–375
  • N Engl J Med 2017; 376:115-124
Rule #2 – Exercise and Desensitize
Aerobic Exercise for Reducing Migraine Burden: Mechanisms, Markers, and Models of Change Processes

Headache 2015

- Aerobic activity improves cardiac output, reduces inflammatory pathways, alters dopamine and serotonin, improves psychologic well-being and self-efficacy

- Desensitizes pain circuits, reduces alldynia

- Goal of 5-7 days per week of 30-60mins aerobic, cardiac activity
  - Breathe so fast you can’t say a full sentence
  - High intensity interval training promising results, fun to do
PT and Rehabilitative Approach to Headache

• Goal is to focus on INCREASING FUNCTIONING

• Increase activity level
  • Daily schedule/routine
  • Attend school daily
  • Avoid laying down during waking hours

• Focus on Aerobic Desentization
  • “Do What Hurts Most”

• Levine Protocol: Exercise guidelines
  • Endurance training- recumbent or semi recumbent position (recumbent bike, rowing machine, aquatic therapy), gradually work up to upright position (Goal 4-5 x/week)
  • Statistical improvement in cardiac output, quality of life, LV mass within 3 mos of regular aerobic training program
Amplified Pain Syndrome: Rehabilitation Outcomes
Clinical J Pain 1999;15(3)

» 103 children with amplified pain syndrome

» Mean duration of pain 2 months

» All received intensive exercise program lasting 14 consecutive days
  – Includes aerobic, hydrotherapy, desensitization
  – No medications for pain
  – Psychologic counseling

» 92% became symptom free during treatment
  – 88% symptom free at 2 years
  – 10% fully functional with some pain at 2 years
  – 2% remained with some functional limitation at 2 years
Rule #3 - Sleep
Sleep Recommendations

- Data showing migraine patients have statistically significant increase in sleep related disorders including onset, duration, awakenings, breathing (Headache 2003;43:362-368)

- Data demonstrating the bidirectional relationship between pain and sleep (Palermo, 2010)

- Sleep Goals
  - 8-12 hours per night based on American Sleep Academy, AAP
Sleep Dos & Don’ts

**DO:**
- Maintain consistent sleep/wake schedule (vary weekend sleep no more than 1-2 hours)
- Use your bed ONLY for sleeping, not a place to use electronic devices
- Have a regular bedtime routine – do the same things each night to cue your body that it is time to sleep (e.g. a warm bath or shower, read for fun, etc.)
- Get regular exercise or go outside every day
- Make sure your room is at a comfortable temperature
- Keep your room quiet and dark while sleeping
- Do some relaxation exercises before bed

**DO NOT:**
- Exercise right before bed
- Do something exciting or stimulating right before bed (watch a suspenseful TV show, play video games, get into an intense conversation with family or friends)
- Have caffeine after lunch time
- Watch TV or use any computer devices in bed
- Use electronic devices 1 hour prior to bedtime
- Do your homework in bed
- Take naps during the day
- Lay in bed more than 30 minutes if you are not falling asleep; get up and do a relaxing activity and return to bed when you feel sleepy
Rule #4 - Eat
Dietary Recommendations

• Diet Goals
  • Eat at least three meals per day
  • Regular schedule with no prolonged fasts
  • Eat frequent snacks
  • High protein snacks at night
  • Cold Gatorade upon awakening
  • If no GI symptoms, minimize work up for Celiac or other GI disease
  • Screen for eating disorders
  • Focus on caloric intake rather than diet quality

• Data showing fasting headache is common in the population, likely related to vascular and metabolic effects
  • Headache 2009;49:744-752
  • Headache 1999;39:225-227
Rule #5
Prevent headaches
# Headache Treatment Approach


## Table 2  How to Explain Migraine and a Treatment Plan to a Patient and Family

1. Discuss the criteria for migraine and specify which are fulfilled by the child’s symptoms. A standardized handout may be used for this.

2. Discuss migraine pathophysiology to explain to the child and family that increased brain needs, whether due to dehydration, sleep disruptions, poor caloric intake, barometric weather fronts, emotional stress, or increased cognitive demands, result in vasodilation to the brain, which results in activation of the V1 subdivision of the trigeminal nerve, causing head pain.

3. Discuss the treatment strategy for the patient’s migraine, including separate foci on lifestyle modification, behavioral strategies, abortive therapies, and preventive therapy when indicated. A standardized handout with clear delineation of each of these areas can act as a self-administered treatment plan at home.

4. Discuss the indications for diagnostic testing and whether or not the patient fulfills these. If the patient does not require testing, discuss the historical and examination findings that are reassuring and make the likelihood of more serious central nervous system pathology unlikely.

5. Provide appropriate contact information for interim support for headaches. Consider providing a specific emergency department protocol for status migrainosus.

6. Provide specific follow-up timing.
Comprehensive Headache Treatment Plan

My Headache Treatment Plan

Diagnoses: Migraine with aura, Migraine without aura, Chronic Migraine, Status Migrainosus, Basilar-Type Migraine, New Daily Persistent Headache, Medication Overuse Headache, POTS/Orthostatic Intolerance, Amplified Pain Syndrome, Post Concussive Headache, Tension Type Headache, Cluster Headache, Trigeminal Neuralgia

Preventative Treatment - Do these every day to prevent headaches

☐ Fluids _____ ounces per day, none with caffeine or artificial sweeteners
☐ Exercise - 5 times a week for 30 minutes of aerobic activity (running, biking, swimming)
☐ Sleep - _____ hours each night, with no more than 2hrs change (do not stay up or sleep in)
☐ Diet - 3 healthy meals a day plus snacks if needed
☐ Screens - Take rest breaks with prolonged use (i.e. 30 min on, 10 min break)
☐ Participate - Do not avoid activities because of headache
☐ Distract yourself - When you have pain do something you enjoy
☐ Desensitize - Work through pain to teach your brain to ignore amplified pain signals
☐ Don’t ask or talk about pain - Avoid focusing on pain and do not “check-ins” about pain

☐ Take the following medication every day to prevent headache:

<table>
<thead>
<tr>
<th>Week</th>
<th># Pm AM</th>
<th># Pm PM</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
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<td>3</td>
<td></td>
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<tr>
<td>4</td>
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Acute Treatment - Do this immediately at the first sign of headache (<1 hour from onset)

☐ Fluids (sports drink) _____ oz. Drink quickly every time you get a headache. Avoid G2/Propel.
☐ _______ _______ mg at headache onset. Do not take more than _____ days/week.
☐ _______ _______ mg
☐ If your child has a headache longer than 3 days and the above treatment failed, go to the nearest Emergency Department for the migraine protocol on the back of this sheet.

Diagnostic Testing - Email your provider once completed to notify them the test was done for results.

☐ Neuroimaging MRI Brain, MRV Brain, MRA Brain
☐ Other Testing

Lifestyle Modification

Preventative Medication

Behavioral Management

Rescue Medication
Trial of Amitriptyline, Topiramate, and Placebo for Pediatric Migraine – CHAMP


**Figure 2.** Patients with a Relative Reduction of 50% or More in the Number of Headache Days.

Shown is the percentage of patients with a relative reduction of 50% or more in the number of headache days in the comparison of the 4-week baseline period with the last 4 weeks of a 24-week trial (primary end point). Results are shown for the primary analysis and two a priori sensitivity analyses to assess the effect of missing data. Sample sizes for the trial groups represent the primary analysis population. For observed data, the population is the subgroup with observed data at week 24.
Riboflavin prophylaxis in pediatric and adolescent migraine


**Riboflavin 200-400mg per day vs Pre-Treatment**

Phase 1 – pre-washout (control)

Phase 2 - 3mos, 2a – 4mos, 2b – 6mos

Phase 3 – post-washout

Primary outcome **Headache Frequency: Reduced** 8 days (p<0.01)

Secondary outcome **Headache Intensity: Reduced** to Mild (p<0.01)

Secondary outcome **Response to Abortives: Improved** in 77%
Rule #6
Use Rescue Medications Appropriately
## Abortive Treatment In Children


### Table 2

<table>
<thead>
<tr>
<th>Drug</th>
<th>Class</th>
<th>Study Design</th>
<th>n</th>
<th>Age (Years)</th>
<th>Primary End Point</th>
<th>Efficacy</th>
<th>Placebo Response</th>
<th>Clinical Impression of Effect</th>
<th>Adverse Effects</th>
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<td><strong>NSAIDs and nonopioid analgesics</strong></td>
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<td>Ibuprofen</td>
<td>II</td>
<td>DBPC</td>
<td>88</td>
<td>4–16</td>
<td>HA response</td>
<td>68%</td>
<td>37%</td>
<td>++</td>
<td>Infrequent</td>
<td>45</td>
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<td>II</td>
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<td>84</td>
<td>6–12</td>
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<td>Infrequent</td>
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<td>II</td>
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<td>32</td>
<td>10–17</td>
<td>HA relief</td>
<td>69%</td>
<td>28%</td>
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<td>4–16</td>
<td>HA response</td>
<td>54%</td>
<td>37%</td>
<td>++</td>
<td>Infrequent</td>
<td>45</td>
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<td><strong>Triptans (serotonin1B/1D receptor agonists)</strong></td>
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<td></td>
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<td>Nasal spray</td>
<td>II</td>
<td>OL</td>
<td>58</td>
<td>4–11</td>
<td>HA relief</td>
<td>78%</td>
<td>—</td>
<td>++</td>
<td>Occasional to frequent</td>
<td>64</td>
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<td>14</td>
<td>6–10</td>
<td>HA response</td>
<td>86%</td>
<td>43%</td>
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<td>DBPC</td>
<td>510</td>
<td>12–17</td>
<td>2-hour HA response</td>
<td>63%–66%</td>
<td>53%</td>
<td>+++</td>
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<td>171</td>
<td>12–17</td>
<td>1-hour HA response</td>
<td>58%</td>
<td>43%</td>
<td>+++</td>
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<td>65%</td>
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<td>66%</td>
<td>56%</td>
<td>++</td>
<td>Occasional</td>
<td>66</td>
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<tr>
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<td>74%</td>
<td>36%</td>
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<td>NA</td>
<td>NA</td>
<td>0</td>
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<td>68</td>
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<td>II</td>
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<td>23</td>
<td>8–16</td>
<td>2 hour &gt;50% decrease</td>
<td>34%</td>
<td>21%</td>
<td>0</td>
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<td>Zolmitriptan</td>
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<td>OL</td>
<td>38</td>
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<td>HA improvement</td>
<td>88%</td>
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<td>+</td>
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<td></td>
<td>I</td>
<td>DBPCCO</td>
<td>32</td>
<td>11–17</td>
<td>2-hour pain relief</td>
<td>62%</td>
<td>28%</td>
<td>++</td>
<td></td>
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<td></td>
<td>I</td>
<td>DBPC</td>
<td>850</td>
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<td>2-hour HA response</td>
<td>53%–57%</td>
<td>58%</td>
<td>0</td>
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<td>70</td>
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<td>267</td>
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<td>57%</td>
<td>57%</td>
<td>0</td>
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<td>Almotriptan</td>
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<td>OL</td>
<td>15</td>
<td>11–17</td>
<td>HA reduction</td>
<td>85%</td>
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<td>+</td>
<td>Occasional</td>
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<td>I</td>
<td>DBPC</td>
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<td>2-hour pain relief</td>
<td>67%</td>
<td>55%</td>
<td>++</td>
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<td>OL</td>
<td>17</td>
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<td>HA response</td>
<td>64%</td>
<td>—</td>
<td>+</td>
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<td>78%</td>
<td>—</td>
<td>+</td>
<td>Frequent 80%</td>
<td>74</td>
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</table>

**Abbreviations:** DBPC, double blind placebo-controlled; DBPCCO, double blind placebo-controlled crossover; HA, headache; IV, intravenous; NSAID, nonsteroidal anti-inflammatory drug; OL, open-label; SB, single blind.

*a Clinical impression of effect: O, ineffective: most patients get no improvement; +, somewhat effective: few patients get clinically significant improvement; ++, effective, some patients get clinically significant improvement; ++++, very effective: most patients get clinically significant improvement.*

*Data from Refs. 63–74*
Avoid Medication Overuse Headache

Headache: 2008;48(8):1242

- Misuse of medications/caffeine
  - NSAIDS/Analgesics ≥ 15 days/month
  - Triptans ≥ 10 days/month

- Gradual increase headache frequency
  - ≥15 headaches per month

- Low dose daily use worse than high dose

- Treatment is withdraw of medications/caffeine
  - 2 months off offending agent

- Conflicting results if preventative medications improve outcome or reduce morbidity
  - Single pulse Trans-Magnetic Stimulation

**Note:** Based on data from 28 patients with severe migraine.
Source: Dr. Manjivar
Medication overuse headache

Headache medications taken too regularly can paradoxically cause a new headache, called medication overuse headache (MOH), that is constant, over & above the primary headache. The treatment is to stop the medications & treat the primary headache.

Central sensitization

Using rescue headache medications every day changes the balance of neurochemistry (in particular serotonin) in the brainstem, leading to central sensitization.

Central sensitization increases overall sensitivity in the head, leading to abnormal excitations of the brain pain pathways. This creates a nearly constant pain experience for the patient known as medication overuse headache (MOH). It is also called rebound headache.

Features

1. New headache 15+ days a month
2. Regular combined use of rescue headache medications (triptans, opioids, butalbital, carisoprodol, acetaminophen, ibuprofen, naproxen) more than 10 days a month for 3+ months
3. No other explanation for new headache

Treatment

1. Stop or taper off rescue headache medications
2. Optimize preventive strategy: oral medications, Botox, and/or monoclonal antibodies
3. New bridge therapies with
   - Nerve blocks & ablations
   - Botox injections
   - DHE infusion, valproate, levetiracetam infusions
4. Pain psychology support
5. Diagnosis & treatment of the primary headache

Risks

1. While stopping headache medications to treat headache seems counter-intuitive, studies have shown this is the only reliable way to treat MOH
2. Some medications like carisoprodol must be reduced slowed via a gentle tapering process
3. The discomfort from stopping medications is a necessary cost for treatment

Patients with MOH are in particular misery because not only is the original, primary headache still present, there is now an overlapping secondary MOH.
Rule #7
Utilize Cognitive Behavioral Therapy
At the 20-week end point, **days with headache** were reduced by 11.5 for the CBT plus amitriptyline group vs 6.8 for the headache education plus amitriptyline group (difference, 4.7 [95% CI, 1.7–7.7] days; P = .002).

The **PedMIDAS** decreased by 52.7 points for the CBT group vs 38.6 points for the headache education group (difference, 14.1 [95% CI, 3.3–24.9] points; P = .01).
Pain-Focused CBT

- Co-occurring anxiety/depression – exacerbate Headache symptoms

- Psychoeducation about the mind-body connection (thoughts -> emotions -> behaviors)
  - Impact of stress on pain; impact of pain on stress
    Stress increases demands on nervous system
    Stress response: fight or flight
    Even unrecognized stress can impact headaches
  - Prevention of depression and avoiding anxiety cycles

- Understanding physiological responses, identify emotions, and individual stress responses

- Thoughts and behaviors effects on pain exacerbations
  - Identification of “Negative/Unhelpful Thoughts”
  - Challenging negative thoughts
    - “I will never make it through the school day with this dizziness”
Stress & Pain

- Children/teens often have difficulty understanding the interplay between emotional and physical effects of stress.

- Chronic maladaptive reactions to stress have physical and emotional effects on our bodies.

- Identify headache-related stressors – over time most patients can identify some type of trend.

- Learning how the mind and body are connected and how repeated stress level impacts pain is important in effectively increasing relaxation and reduce pain intensity.
The Cognitive Triangle

THOUGHTS

FEELINGS → BEHAVIOR

What we think
"I can't cope"

What we do
Avoid

How we feel
Worried, scared
Relaxation

• Types of Relaxation Training:
  • Diaphragmatic Breathing: To reduce muscle tension and promote deep relaxation. Diaphragmatic breathing also provides a distraction from stress and pain.
  • What is Deep Relaxation: A distinct physiological state that is the exact opposite of the way the body reacts under stress or during a pain flare-up.
Relaxation Skills: Guided Imagery

- Goal: To provide distraction and relaxation from symptoms in a manner that reduces pain.

- Definition: Guided Imagery is a relaxation technique where thoughts and beliefs are purposely “redirected” by way of words on an imaginary story (visualization) to create a desired outcome or goal.

- Mindfulness
Relaxation Skills: Progressive Muscle Relaxation

- **Goal:** Assist in reducing muscle tension and increasing calmness and comfort in the body
- **Task:** Each large muscle group will be stretched or tensed for approximately 30 seconds
  - Stretching or tensing allows the muscle to become tired and fatigued
  - When the muscle is then relaxed, the difference between being tight and tense and being more relaxed is more prominent.
Rule #8

Provide Education, Reassurance, & More Education
Education, Education, & Education!

- “All pain is real to the patient, regardless of whether or not there is clear origin”

- Difference between acute pain and chronic pain – use analogies

- Stress (good and bad) typically worsens any medical problems including pain

- Pain is always personal and subjective

- “The relationship between anxiety, depression, and pain is bi-directional”
Education, Education, & Education!

- Improved functioning and coping comes first, *pain reduction is secondary*

- **Functioning typically improves before pain intensity reduction** (McGrath et al. 2004)

- **Can not wait until they feel better to resume life**

- Pain heals slowly
Rule #9

Help Parents with Coping and Coaching
Parent and Child Distress Effects on Pain


- 195 patients with chronic pain (ages 8–17) and their parent(s)

- Two parental factors emerged as significant (p< 0.05) factors predicting worse outcomes in children
  
  - **Parent avoidance of activities due to fear of pain**
    - Parent Fear of Pain Questionnaire is a 21-item self-reported measure to assess parental fears and avoidance behaviors regarding their child’s pain
  
  - **Parent protective behavior**
    - Adult Responses to Children’s Symptoms is a 29-item self-report measure that assesses a parent’s protectiveness, minimizing, and encouraging responses to a child’s pain
  
- Parent distress and behavior influence child distress and functioning over time and these findings identify key parent domains to target in the context of a child’s pain treatment.
Strategies for Working with Parents

• The symptoms are real

• Focus on Functioning and Coping
  • Distract
    • Limit catastrophic thinking
  • Don’t check in repeatedly about pain
Strategies for Working with Parents

Make Pain Less Dangerous”

Eliminate status checks – Remove focus from the pain

Modify contingencies in child’s environment may influence pain & disability (e.g., school avoidance/refusal, access to electronics)

Be cautious how much concern and worry expressed in front of child – pain is frightening

Encourage child to manage pain independently

Encourage child to do similar activities before pain started, even if modified

Don’t avoid going places or doing things with child out of fear of pain
Live life = Take more breaks!!
Strategies for Working with Parents

• Secondary gain can happen as a byproduct of dependence on caregivers, reduced demands on the patient, and reduced activity

• Avoid a reinforcing environment (pt should not be allowed to sit at home and play video games)

• Provide positive attention and praise when coping with the pain (not demonstrating pain behaviors)
Rule #10

Daily School Attendance
SCHOOL & PAIN

- **Daily School Attendance** is critical to student’s physical and emotional well-being
- Long term home bound is **strongly discouraged for pain**
- School should not be “optional” for recurrent headaches
- WHY??
  - Distraction
  - Lower long-term stress
  - Fits with Treatment Plan /goals
    - Increased functioning/activity
    - Remember: they have a TEAM
  - School attendance does not need to be all or nothing
    - It can be a modified day...
    - Paced school plan
School Recommendations: 504 Plan

- Flash Pass
- Access to hydration & nutrition
- Flexible make-up time for assignments, exams, & projects
- Reduced work load/mastery of content
  - ONLY while catching up on missed work/after missing several consecutive days/weeks (limited time)
- Modify schedule to increase time spent in school
  - E.g., delayed start or early release
- More travel time between classes
- Reduce class load (if you can)

- Note: 504 Plan can be beneficial;
- can also be counter-productive
Refer for Consultation with Children’s Comprehensive Headache Team
Urgent, Specialized Headache Care: TRUST THE EXPERTS

For urgent appointments, call 202-476-HEAD (4323) from 8:30 a.m. to 4:00 p.m. Monday through Friday to speak with a trusted headache expert in one of the following locations:

- Washington, DC
  Sheikh Zayed Campus
- Montgomery County, MD
  Montgomery County Regional Outpatient Center
- Anne Arundel County, MD
  Annapolis Regional Outpatient Center
- Prince George’s County, MD
  Laurel Regional Outpatient Center
- Fairfax County, VA
  Pediatric Specialists of Virginia (PSV) Northern Virginia Outpatient Center

The Headache Team offers the following services to their patients and families:

- **Urgent headache appointments** – most patients can be scheduled within five business days of calling to see a headache expert and provide urgent management

- **Interdisciplinary headache evaluations** – patients with chronic debilitating headaches have the option of seeing an interdisciplinary team of experts including neurologists, behavioral pain medicine specialists, anesthesiologists, and neurosurgeons, who aim to provide a comprehensive approach to pain management

- **Headache infusions** – patients with acute exacerbation of headache disorders can be given intravenous infusions in an outpatient setting to alleviate their pain rapidly and get them back to school and activities

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MEET THE TEAM

Marc DiSabella, DO, Director, Headache Program, Child Neurology
Raquel Langdon, MD, Co-Director, Headache Program, Child Neurology
Kasey Crowder, MSN, CPNP, Child Neurology
Angela Fletcher, PsyD, Behavioral Pain Medicine Psychologist
Laura Gray, PhD, Behavioral Pain Medicine Psychologist
Ilana Kahn, MD, Child Neurology
Marian Koloedig, MSN, CPNP, Child Neurology
William McClintock, MD, Child Neurology
Jennifer Tu, MD, PhD, Child Neurology

Children's National
111 Michigan Ave NW
Washington, DC 20010
childrensnational.org
Urgent Headache Team
Children’s National Health System

• 6 Attending Physicians
• 1 Nurse Practitioners
• More than 50 Urgent Access Appointments Weekly
  • Annapolis, DC, Fairfax, Frederick, Friendship Heights, Laurel, and Rockville
Comprehensive Headache Team
Children’s National Health System

- Behavioral Pain Medicine – 1 PsyD, 1 Intern, 1 Extern, 1 Fellow
- Anesthesia/Pain Medicine - Nerve Blocks, Trigger Point Injections, Botox, Acupuncture
- Physical Therapy – 2 PTs doing desensitization, range of motion, pain de-amplification
- Neurosurgery - Occipital nerve stimulator, Neuro-interventional Procedures
- Clinical Coordinator – Urgent Appointments, Chronic Headache Multidisciplinary Appointments
- Headache Nurse – Urgent Headache Needs, Forms, Authorization
- Headache Infusion Center – 2 beds x 5 days per week, two nurses, coordinator
- Research Assistant – 3 IRB internal protocols, 2 Clinical Trials
Conclusions

• Instruct patients on goals for hydration, exercise, sleep, and diet to help reduce headache frequency

• Consider using neutraceuticals, vitamins, or prescription medications to prevent headache

• Recommend aggressive but infrequent use of abortive therapies

• Utilize cognitive behavioral therapy to improve compliance with treatment

• Provide education and reassurance about headache plans

• Help parents with coping strategies to reduce pain behaviors and improve resiliency so children can attend school and activities regularly

• Refer to Children’s National Urgent and Comprehensive Headache Program when necessary
  • Call 202-476-HEAD (4323)
  • Email headache@childrensnational.org