Pediatric Headache: Review of a common problem and an approach to early management

Jessica Gautreaux, MD
Director CHNOLA Headache Center
Assistant Professor of Neurology, LSUHSC-NO
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How big of an issue is headache?

- 58% percent of children experience headaches
- By 18 years of age 90% of adolescents will have had a headache
  - 20% of kids age 4 – 18 will have recurrent headaches over a year
  - ~ 8% have migraine
  - 1.5% of middle school students have chronic headaches
How big of an issue is headache?

• Migraine is the 2nd leading cause of years lived with disability according to the Global Burden of Disease
  • Most disabling neurological disease in the world for people under age 50

• Annual loss productivity 1.4 to 17 billion USD
  • In children = missed school days, missing extracurriculars and activities
  • Headaches account for ~20% of children that are medically homebound
  • In parents = missed work and less participation in family activities
WHO estimates 1/2 of patients with migraine haven’t seen a doctor in the last year.

• 50% of children with headaches have not seen a PCP.

• It is believed that only 2/3rd of patients are actually diagnosed.

• WHY?

#NotJustAHeadache
<table>
<thead>
<tr>
<th>CHAMP Recommendation</th>
<th>Currently Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache Disease(s), Headache Disorder(s)</td>
<td>Headache(s)</td>
</tr>
<tr>
<td>Headache Attack, Migraine Attack, Cluster Attack</td>
<td>Headache(s), Migraine(s), Episode(s)</td>
</tr>
<tr>
<td>Migraine Disease, Living with Migraine Disease</td>
<td>Migraine Headache, Migraines</td>
</tr>
<tr>
<td>Person with Migraine disease, Person Living with Migraine</td>
<td>Migraine Personality, Migraineur, Migrainer,</td>
</tr>
<tr>
<td>Disease</td>
<td>Migraine Person, Migraine-Type Person</td>
</tr>
<tr>
<td>Experience(s) the Pain and Disability of Migraine Disease</td>
<td>Suffering from Migraine, Migraine Sufferer</td>
</tr>
<tr>
<td>Migraine Spectrum, Migraine Continuum</td>
<td>None</td>
</tr>
<tr>
<td>Migraine Remission, Break in Migraine Attacks</td>
<td>Cured of Migraine, Migraine Cure, Migraine Miracle</td>
</tr>
<tr>
<td>Medication Adaptation Headache</td>
<td>Medication Overuse Headache, Rebound Headache</td>
</tr>
</tbody>
</table>
Primary Headaches

**Migraine Without Aura**

A. At least five attacks fulfilling criteria B-D
B. Headache attacks lasting 4-72 hr (untreated or unsuccessfully treated)
C. Headache has at least two of the following four characteristics:
   1. unilateral location
   2. pulsating quality
   3. moderate or severe pain intensity
   4. aggravation by or causing avoidance of routine physical activity (e.g., walking or climbing stairs)
D. During headache at least one of the following:
   1. nausea and/or vomiting
   2. photophobia and phonophobia
E. Not better accounted for by another ICHD-3 diagnosis.
As of 2013, 416 UCNS certified Headache Specialists for 36 million people with migraine (+ other primary headaches + children)

- Limited education in pediatric headache treatment in medical education programs

- Can delay diagnosis, delay appropriate treatment, even result in harmful treatment
The Headache Action Plan Project for Youth (HAPPY): School Nurses as Facilitators of System Change in Pediatric Migraine

- School nurses are often the first medical professional with whom children with headaches will come into contact.

- Hold a pivotal role in helping to initiate proper treatment.

- HAPPY project – teaching of school nurses, PCP’s and students with access to a user-friendly resource website.
  - www.headachereliefguide.com
School nurses are often the first medical professional with whom children with headaches will come into contact. They hold a pivotal role in helping to initiate proper treatment. HAPPY project – teaching of school nurses, PCP’s and students with access to a user-friendly resource website.
Headache Education Active-Waiting Directive: A Program to Enhance Well-Being During Long Referral Wait Times

• Educational Impact Study of adults on the waiting list for an academic headache center in Toronto attended headache well-being education seminar

• Educational topics:
  • Medication overuse
  • Stress management
  • Sleep hygiene
  • Hydration
  • Morning protein intake

• Results
  • Decrease in MIDAS scores
  • 50% reduction in ED visits
  • Decrease in medication use
  • Improvement in hydration, sleep, and morning protein

• 80% reported program useful
  • 42% very satisfied
  • 44% somewhat satisfied

• 79% reported feeling empowered after the session
Childhood and Adolescent Migraine Prevention (CHAMP) Study

- Children ages 8-17 years with disability scores (PedsMIDAS) of mild to severe; n = 328

- ≥ 4 headache days per month

- Patients who received amitriptyline or topiramate had higher rates of adverse events:
  - Amitriptyline
    - fatigue (30% vs. 14%)
    - dry mouth (25% vs. 12%)
    - 3 serious AE
  - Topiramate
    - paresthesia (31% vs. 8%)
    - weight loss (8% vs. 0%)
    - 1 serious AE

≥ 50% reduction in # of HA days

Why does it matter?

Episodic Headache

Chronic Headache
Our Approach

Lifestyle and Headache Hygiene

Acute Treatment

Prophylaxis (if needed)
TEENs

• 1619 teenagers (12-18 years) from six Catalanian schools responded to survey

• 30.5% experienced recurrent headaches
  • 32% of those had at least 1 headache per week
  • 11.5% migraine

• Headaches significantly more common in teenagers who:
  • Had poor sleeping habits
  • Lacked physical activity
  • Skipped breakfast
  • Consumed caffeine
  • Were smokers
How Important is Headache Hygiene?

• 947 charts from headache clinic at Nemours Hospital for Children reviewed to see if patients had achieved headache hygiene and if they had achieved goal of 50% headache reduction

• Headache Hygiene (Remember the Eights!)
  • $5 + 2 + 1 + \text{None} = 8$

• In patients who achieved headache hygiene 83% achieved treatment goal

• In patients who did not achieve headache hygiene only 35% reached treatment goal.

Be Specific!
Avoid Blaming Language!
Hydration

• “A randomized trial on the effects of regular water intake in patients with recurrent headaches”

  • RCT of increasing water consumption by 1.5 L vs control

  • 4.5 point improvement on MSQL

  • 47% vs 25% perceived intervention effect of much improvement

Water Recs

• Drink at least 8 glasses of water per day
• Carry water during school day
• Drink water all day! Not just when home from school
• Consider sending a water note to school
• 4oz (4 big gulps!) for every 20 minutes of physical activity
Sleep

• Lack of sleep endorsed as trigger factor for migraine in 69.6% of children in one study
  • In adults late onset of sleep was reported as an occasional TF by 32% of patients whereas lack of sleep was reported as a TF by 44% - 57% of adults living with migraine.

• “Sleep Hygiene and Migraine in Children and Adolescents”
  • patients with migraine showed significantly higher rates of poor sleep hygiene than controls
  • Sleep hygiene encouraged with improvement in frequency and mean duration of headaches

• “Behavioral Sleep Modification May Revert Transformed Migraine to Episodic Migraine”
  • RCT in adults with 100% conversion from chronic to episodic
Sleep

• Sleep 8-12 hours every night
• Consistency is key!
• Establish a bedtime routine
• Eliminate daytime naps
• Ask about snoring!
Dietary Habits

• “The diet factor in pediatric and adolescent migraine”
  • Implicated foods: Caffeine, chocolate, nitrates, MSG, aspartame
  • Fasting is reported as a trigger in 45% - 56% of patients with migraine in population based studies

• “Caffeine-Induced Headache in Children and Adolescents”
  • 36 children and adolescents with high caffeine consumption and chronic headaches
  • Gradually withdrawn with complete improvement in 33 patients
Dietary Habits

• Make time to eat breakfast every morning

• Check if eating school food

• Recommend checking menu and send a lunch on days the child doesn’t eat the offered items

• Limit processed foods and caffeine
Exercise

• “Exercise as migraine prophylaxis: A randomized study using relaxation and topiramate as controls”
  • RCT of exercise 40 minutes 3 times per week vs. topiramate vs. relaxation
  • All equally effective

• At least 30 (work up to 60) minutes of aerobic activity 5 days per week

• Don’t forget to hydrate!
Behavioral Therapy/Stress

• Use a chief complaint of headaches as a check-in – bullying, abuse, fear, expectations

• “Prophylactic Treatment of Migraine in Children. Part 1. A Systematic Review of non-Pharmacological Trials”
  • 19 trials showing benefit over controls
    • Relaxation
    • relaxation + biofeedback
    • relaxation + biofeedback + cognitive behavioral treatment

• Relaxation + behavioral therapy was more effective than placebo
Our Approach

Lifestyle and Headache Hygiene

Acute Treatment

Prophylaxis (if needed)
Acute Treatment

• Treat early with full dose
  • Relief of headache
  • No recurrence
  • Preserve function

• Step care approach vs stratified care approach
  • stratified > efficacy
  • stratified saves healthcare $$$

• Triptans
  • ≥ 6 years:
    • rizatriptan
    • sumatriptan nasal (studied but not FDA)
    • zolmitriptan nasal (studies in progress)
  • ≥ 12 years:
    • almotriptan
    • zolmitriptan nasal only
    • Treximet (sumatriptan/naproxen)
Medication Use

• Use > 10 times per month for ≥3 months
  • Triptans
  • Ergots
  • Opioids
  • Mixed analgesics

• NSAID use ≥15 days per month for ≥3 months
  • Butalbital - >5 days per month

• No role for opiates
Medication Use

• Limit medication use for headache to 2-3 doses of acute symptomatic treatment per week

• Start each week with a plan!

• No role for preventing headache using acute treatments
Headache Hygiene

START IMPROVING YOUR CHILD’S HEADACHES TODAY

Headache is one of the most common symptoms reported by patients and frequently, it begins in childhood. Nearly 60% of children report having had a headache and this increased to 90% by the time they reach age 28 years. Some children even experience chronic headaches in which they have headache more than 15 days per month.

Children can experience severe headaches like migraine headaches. Half of all migraine sufferers will experience their first attack before age 12.

Headaches can significantly impact a child’s life, interfering with their ability to participate in school and other activities.

Doctors use many tools to treat headaches, but frequently the first thing your doctor may do to help your child's headache is to review your child’s daily habits and patterns and improve their headache hygiene. Things such as skipping meals and/or not drinking enough water each day are common causes of headaches and can make children who experience migraines have headaches more often.

Headache hygiene is a practice of creating an environment that can help to reduce the frequency, intensity, and severity of headaches and potentially lessen the need for medications.

Parents and caregivers play a very important and very active role in improving children’s headaches by helping them to create healthy habits and practice good headache hygiene. Headache hygiene is the first step in the battle against headache! You can get started today with these tips.
References