



REFERRAL GUIDELINE

Pediatric Neurology

Migraine Headache

Background	A common disorder that affects children and adolescents from 3 months of age throughout their lifetime, more common in females with a 3:1 ratio and a significant genetic component. Approximately 8–9 percent of children/teenagers are prone to developing migraines, with increasing frequency among teenagers greater than 14 years of age. While the mechanisms of migraine is not completely understood, it is believed migraine is a neurogenic process with secondary changes in cerebral perfusion, affecting cortical, subcortical and brainstem areas that regulate autonomic, affective, cognitive and sensory functions.
Initial Evaluation	<p>Obtain pertinent history, physical and neuro exam. Differentiate between:</p> <ul style="list-style-type: none"> • Primary headache (tension or migraine) • Secondary headache (trauma, tumor, ICP, sinus headache, TMJ disease, dental abnormalities, systemic illness, vascular disorders, substance abuse, epilepsy and seizures, affective disorders/psychosocial) <p>Pertinent History:</p> <ul style="list-style-type: none"> • Type, location and daily timing of pain, duration and chronicity of headaches • Sleep disturbances • Headache triggers (food, environmental factors) • Psychosocial (child/parent relationship, alcohol/drugs/tobacco use, stressors, bullying, learning disability, school situation, chronic family illness, boyfriend/girlfriend problems) <p>Pertinent Physical Exam: Vital signs with</p> <ul style="list-style-type: none"> • Head circumference • Cutaneous abnormalities • Head and neck inspection • Nose and throat inspection • Temporomandibular joints • Eye: Funduscopy exam, extraocular movements • Deep tendon reflexes, tandem (heel-to-toe) gait, pronator drift <p>History Red Flags:</p> <ul style="list-style-type: none"> • Worse headache of their life • Headache during sleep or one that wakes you from sleep, with or without vomiting • Occipital head pain exacerbated by Valsalva, sneezing or coughing • Headache first thing in the morning or positional headache with vomiting • Confusion or altered mental status • Sudden or complete loss of vision, diplopia • New onset seizures, or focal neurologic symptoms • Personality changes • Accelerating course of frequency or severity of headache • Recurrent severe headache unresponsive to treatment



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	<p>P.E. Red Flags:</p> <ul style="list-style-type: none"> • Signs of ICP (large or accelerating head circumference, papilledema) • Cranial nerve VI palsy (abducens nerve palsy) which is responsible for causing contraction of the lateral rectus muscle to abduct (turn out) • Meningeal signs (fever, rigors) • Evidence of recent trauma • Altered mental status • Focal neurological signs (ocular paralysis, nystagmus, ataxia, hemiplegia) <p>Primary Tension Headache:</p> <ul style="list-style-type: none"> • Diffuse or bilateral pain • Non-throbbing pain (tightening or pressing) • Mild to moderate head pain NOT aggravated by light, sound, sensitivity or activity • Lasts 30 minutes to 7 days <p>Primary Migraine Headache without Aura:</p> <ul style="list-style-type: none"> • Bi-frontal or unilateral • Moderate to severe intensity • Throbbing or pulsating • Worsening with activity • Light and or sound sensitivity with nausea and/or vomiting <p>Primary Migraine Headache with Aura:</p> <ul style="list-style-type: none"> • May occur before or during headache, lasting 5-60 minutes • Visual changes (dark or bright spots or lines) • Sensory changes (numbness, tingling) • Speech changes <p>Secondary Headache: If secondary cause is not what you would treat, refer to neurologist</p>
Initial Management	<p>Rescue Medication:</p> <ul style="list-style-type: none"> • Ibuprofen OR acetaminophen OR naproxen sodium: Administer <30 minutes of onset of headache • May repeat ibuprofen after 6 hours, acetaminophen after 4 hours, naproxen sodium after 12 hours <p>Prevention:</p> <ul style="list-style-type: none"> • Hydration with goal being oz/day equals weight (lbs) with max of 100 oz/day. NO caffeine or aspartame • Night sleep duration to be the same weekday and weekend (elementary school children 10–12 hours, teenager 9 hours with no more than 2 hour variability in sleep or wake pattern) • Protein with each meal (meat, cheese, nuts, eggs, beans)- 6 small meals/day • Do not skip meals • Avoid possible food triggers (caffeine, aspartame, aged/hard cheeses, milk/dark chocolate, aged meats, foods high in nitrite/MSG)



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	<ul style="list-style-type: none"> • Avoid other triggers (stress, over exertion, loud noise, bright lights, strong odors, weather changes, secondhand smoke, motion sickness, hormonal changes) • Exercise 3X/week increasing to daily • Headache diary • Establish bedtime routine: ALL electronics/phone off 1 hour prior to bed, nightly shower/tub bath • Develop nightly relaxation techniques to include cognitive behavioral therapy, mindfulness • Vitamin D supplementation, if level low (normal range 30-100) in addition to daily multivitamin to aid with absorption • If headache persistent, RTC for primary care provider 		
When to Refer	<ul style="list-style-type: none"> • If, despite compliance with preventive measures, 1 headache/week • If History Red Flags and/or PE Red Flags present, consult with neurologist regarding urgent v. emergent care. 		
Pre-Visit Work Up	<p>Diagnostic Evaluation: Labs to include:</p> <ul style="list-style-type: none"> • CMP • TSH • Free T4 • Ferritin • Folate • Vitamin B12 • Vitamin D 25OH • Provide most recent clinic visit, all lab work all imaging (if done) 		
Co-management Strategy (as appropriate)	<table border="1"> <tr> <td>Specialist scope of care: Additional testing, treatment until stabilized</td> <td>Primary care scope of care: Well care</td> </tr> </table>	Specialist scope of care: Additional testing, treatment until stabilized	Primary care scope of care: Well care
Specialist scope of care: Additional testing, treatment until stabilized	Primary care scope of care: Well care		
Return to Primary Care Endpoint	Care to be transferred back to Primary Care provider once stabilized		
Guidelines Referenced	<ul style="list-style-type: none"> • Emedicine.medscape.org • http://www.uptodate.com/contents/headache-in-children-approach-to-evaluation-and-general-management-strategies • http://www.uptodate.com/contents/preventive-treatment-of-migraine-in-children • http://uptodate.com/contents/pathophysiology-clinical-features-and-diagnosis-of-migraine-in-children • Lopez, J Ivan. Pediatric headache. Medscape.2015 Jun 23 • My.clevelandclinic.org • Ncbi.nlm.nih.gov 		