

Therapeutic Management of an Acute Migraine Attack in Pediatrics (6-17 years)

International Classification of Headache Disorders diagnostic criteria for migraine

- Must have had at least 5 headaches
- The headache must last 2-72 hours long

The headache must have **ONE** of the following:

- Nausea **AND/OR** vomiting
- Light **AND** noise sensitivity

The headache must have **TWO** out of the 4 criteria:

- Pain that is unilateral or bilateral (typically frontotemporal)
- Pulsating quality
- Moderate or severe pain
- Worsened by, or causes avoidance of routine physical activity

Rules of treatment

1. Treat early, as soon as the attack starts.
2. Repeat 1 dose prn within 24h if attack persist after 1st dose in appropriate interval.
3. Maximum doses: 2 days/week for triptans; 3 days/week for NSAIDs.
4. For patients with a lot of emesis/early emesis, consider nasal spray or ODT format.
5. Medications from different classes may be used in combination.

Recommendations

Non-specific treatment of migraine attacks

TREATMENT	DOSAGE	INTERVAL	MAXIMUM
Ibuprofen ¹	10 mg/kg/dose	q6-8h prn	600 mg/dose, 40 mg/kg/day or 3200 mg/day
Naproxen ^{1, 2, 16}	5-7 mg/kg/dose	q8-12h prn	500 mg/dose, 10 mg/kg/day or 1000 mg/day
Acetaminophen ^{1, 2, 4}	15 mg/kg/dose	q4-6h prn	1000 mg/dose, 75 mg/kg/day or 4000 mg/day

Specific treatment of migraine attacks

TREATMENT	DOSAGE	INTERVAL	MAXIMUM	
Rizatriptan Tablets & ODT	< 40 kg: 5 mg ≥ 40 kg: 10 mg	Can repeat in 2 hours, max 2 doses/24 hours	< 40 kg: 10 mg ≥ 40 kg: 20 mg	5 mg ODT approved by FDA for ≥ 6yo
Zolmitriptan Tablets, ODT & nasal spray	< 40 kg: 2.5 mg PO ≥ 40 kg: 5 mg PO	Can repeat in 2 hours, max 2 doses/24 hours	< 40 kg: 5 mg ≥ 40 kg: 10 mg	2.5 mg nasal spray approved by FDA for ≥ 12 yo
Sumatriptan nasal spray ¹	< 40 kg: 5 mg ≥ 40 kg: 20 mg	Can repeat in 2 hours, max 2 doses/24 hours	< 40 kg: 10 mg ≥ 40 kg: 40 mg	10 mg nasal spray approved by European Medicines Agency for ≥12 yo
Almotriptan ^{1, 2}	< 40 kg: 6.25 mg PO ≥ 40 kg: 12.5 mg PO	Can repeat in 2 hours, max 2 doses/24 hours	< 40 kg: 12.5 mg ≥ 40 kg: 25 mg	6.25 mg and 12.5 mg tablets approved by Health Canada and FDA for ≥ 12 yo
Sumatriptan/Naproxen combined tablet ^{1, 18, 19}	< 40 kg: Do not use due to the 500mg naproxen dose which is too high ≥ 40 kg: 85mg Sumatriptan/500 mg Naproxen once per day			85/500 mg tablets approved by FDA for ≥ 12 yo

Anti-nausea medication^{1, 5-8}

TREATMENT	DOSAGE	INTERVAL	MAXIMUM
Ondansetron liquid, tablets and ODT ²⁵	0.15-0.2 mg/kg/dose PO	q8h prn	8 mg/dose
Metoclopramide liquid, tablets ^{23, 24}	0.1-0.3 mg/kg/dose PO	q6h prn	10 mg/dose
Prochlorperazine tablets and suppositories ²⁰⁻²³	0.1 mg/kg/dose PO/PR	q6-8h prn	10 mg/dose



Over-the-counter preventive treatment

TREATMENT	DOSAGE	INTERVAL	MAXIMUM
Magnesium (elemental)	9 mg/kg/day	BID or qHS	600 mg/day
Coenzyme Q10 or ubiquinol	1-3 mg/kg/day	Daily to BID	200 mg/day
Vitamin B2 (riboflavin)	200-400 mg/day	Daily to BID	400 mg/day

Pharmacological preventive treatment^{9, 15}

TREATMENT	DOSAGE	INTERVAL	MAXIMUM
Topiramate	2 mg/kg/day	BID	200 mg/day
Propranolol	2-4 mg/kg/day	TID	120 mg/day
Amitriptyline	1 mg/kg/day	HS	75 mg/day

SUGGESTIONS FOR PREVENTIVE TREATMENT

1. Therapeutic trials should be a minimum of 6-8 weeks at the target dose.
2. Titration of pharmacologic preventive interventions to the target dose should start low and go slow, over 4-8 weeks.
3. Screen for contraindications to treatments prior to starting them.
4. Treatment decisions need to be individualized based on the patient's preferences and medical profile.

SELF-MANAGEMENT RECOMMENDATIONS

Non-pharmacological recommendations for daily headache prevention

Exercise

- Moderate to high intensity physical exercise 30 minutes to 60 minutes a day.

Sleep

- Establish a regular sleep routine (consistent sleep/wake schedule) and ensure adequate amount of sleep; avoid screens and other stimulating activities 1 hour prior to sleep.

Food and Diet

- Regular meals and fluid intake throughout the day (goal of 8 cups of water/day) is recommended.
- Avoid skipping meals; include protein rich foods in every meal.
- Limit or reduce the amount of caffeine in the diet to avoid caffeine withdrawal headaches. (Caffeine includes iced tea, caffeinated soda, energy drinks, chocolate, coffee, tea.)
- A small number of people may have specific food triggers (e.g. tyramine, histamine). Triggers can be identified by keeping a headache diary and eliminated if identified.
- It is NOT recommended to undertake multiple elimination diets.

Mind and Body Connection

- Daily mindful exercises (meditation, visualization, deep breathing, biofeedback) and body relaxation techniques (yoga, massage, physiotherapy exercises) can be used for prevention of a headache attack and to lower pain/prevent escalation of pain during a headache attack.
- Activity pacing is a helpful tool to support patients to stay engaged in daily activities and limit activity avoidance.
- Anxiety and depressive symptoms are common in children and adolescents with migraine. It is recommended to screen for these and ensure that patients have access to resources for mental health support if symptoms are present.

References available at www.migrainecanada.org/Pediatrics

The recommendations and all other information in this leaflet are based on published guidelines and on the expert consensus endorsed by the Pediatric Canadian Headache Network (PeCaHN). The advice is intended solely for insured medical professionals and Migraine Canada expressly disclaims any direct or indirect liability to any patient.