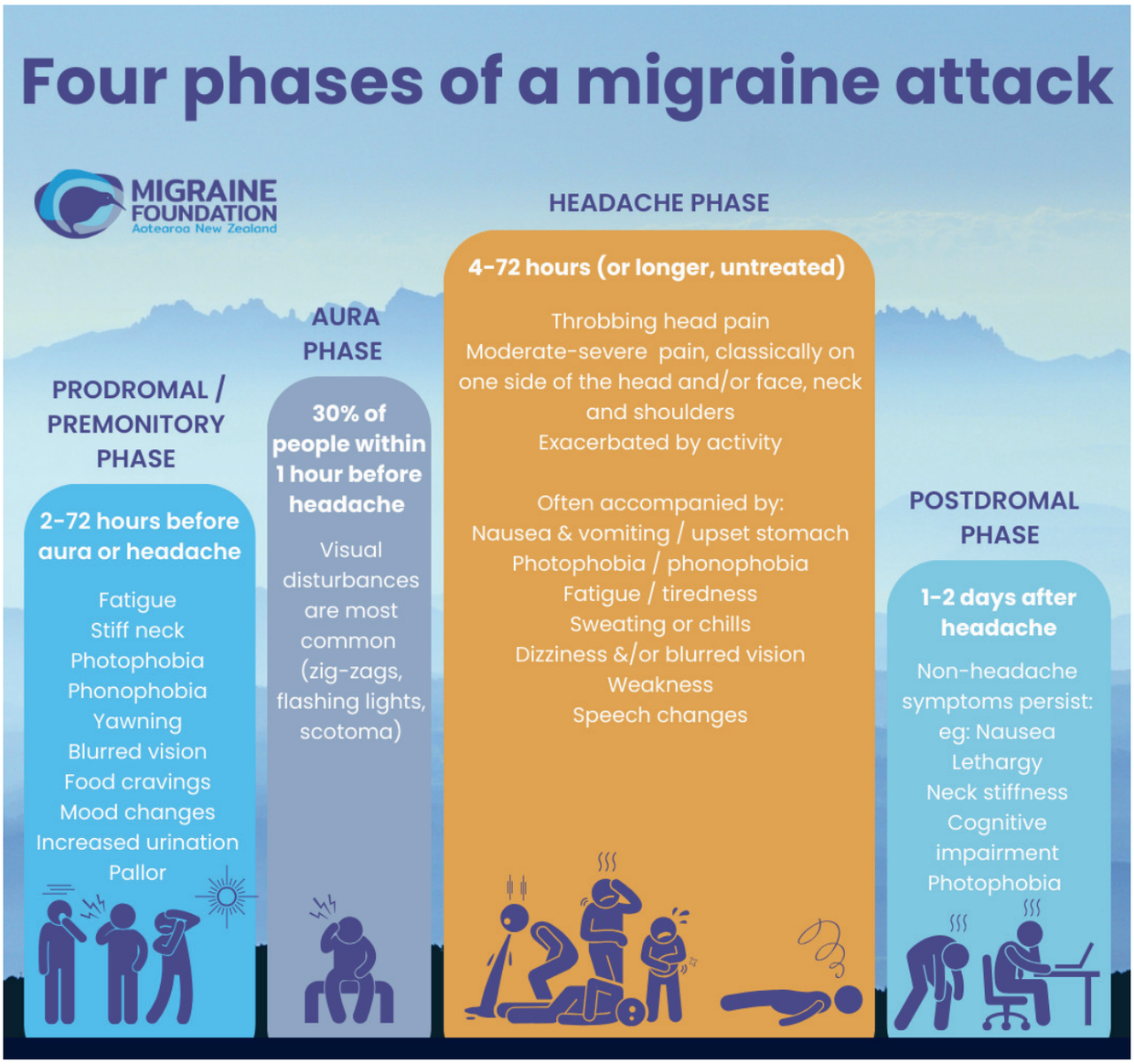
Preventive medications for migraine

Migraine Foundation Aotearoa New Zealand
Reviewed by Dr Rosamund Hill
Last reviewed and updated April 2025

Migraine disease is a neurological condition with a genetic predisposition. Migraine disease causes migraine attacks that typically involve a moderate-severe headache aggravated by physical activity and accompanied by nausea/vomiting and/or sensitivity to light or sound. The headache is commonly on one side of the head and pulsating in nature but can also be all over the head and constant. Migraine with aura includes short-lasting visual or sensory symptoms, usually followed by headache.



It's worth considering taking preventive medication when migraine attacks are frequent and disabling. Preventive medication is taken regularly to reduce the number and severity of attacks e.g. every day for oral medications. Acute medications are only taken when a migraine attack occurs, to reduce and treat the symptoms of the attack.

MIGRAINE FOUNDATION
Aotearoa New Zealand

Preventive medications for migraine

When to start preventive treatment for migraine

Preventive treatment should be considered when a person has:

- four or more headache days a month
- debilitating migraine attacks despite appropriate acute treatment
- acute treatments cause side effects, can't be tolerated or are contraindicated (e.g. non-steroidal anti-inflammatory drugs can't be used if you have chronic kidney disease or stomach ulcers)
- medication overuse (adaptation) headache or risk of medication overuse (e.g. taking acute treatment on more than 2 days a week for 3 months or more)
- persistent, disabling aura symptoms including some rare migraine with aura subtypes (e.g. migraine with brainstem aura).

Goals of preventive treatment

Migraine can't be cured but preventive treatment aims to:

- reduce the number of headache days a month
- reduce the severity of migraine attacks
- reduce the amount of acute medication used
- reduce migraine-related disability.

What to expect with oral preventive medications

For most oral preventives, a quick response isn't expected. Start with a low dose and increase the dose slowly, every 1–2 weeks. It takes at least 8 weeks on the highest dose tolerated (without side effects) before medication efficacy can be determined. From research on these medications, a preventive is considered 'effective' if it reduces headache frequency by 50%, which is achieved in at least half of patients.

Side effects can be an issue. As many as half of patients stop taking oral preventives in two months because of side effects or lack of effectiveness. Effectiveness can also wane over time. Combining two preventive treatments from different drug classes may be required, if one has only a partial effect.

A headache diary or tracking app is useful to record the number of days with headache and other symptoms to see whether treatment is working. It's also helpful to use a migraine-disability questionnaire before starting treatment and see whether this has improved after 8 weeks of treatment e.g. the Migraine Disability Assessment Test (MIDAS)[1] or the Headache Impact Test.[2]

[1] headaches.org/wp-content/uploads/2018/02/MIDAS.pdf
[2] headaches.org/wp-content/uploads/2018/02/HIT-6.pdf.

Preventive medications for migraine

Preventive medication options

Choice of medication depends what might best suit the individual, taking into account other health conditions and characteristics. For example, sodium valproate or topiramate aren't recommended for women of child-bearing potential. Beta-blockers (e.g. propranolol) aren't recommended in people with asthma and must be used with caution in heart failure and other vascular conditions. A beta-blocker can be useful in people with anxiety; amitriptyline or venlafaxine may be useful in people with depression. Pizotifen is not a good choice if weight gain is a concern.

The evidence for effectiveness of preventives tends to be stronger or more established for episodic migraine (migraine on 14 or fewer days per month) than chronic migraine (headache on 15 or more days per month). The exception to this is onabotulinumtoxin A, which has been shown to be effective in chronic but not episodic migraine. However, this isn't generally accessible through public neurology clinics and may only be available through private health care. The new anti-calcitonin gene-related peptide treatments (injections galcanezumab and erenumab and oral atogepant) are effective for both episodic and chronic migraine but aren't funded.

Consider withdrawal of oral preventive medications after 6–12 months, once an effective response has been maintained.

Medication	Starting dose & final effective dose to aim for	Amount to increase by (every 1-2 weeks)
First-line options		
Amitriptyline*	10mg at night, up to 150mg at night	10-25mg
Propranolol**	10mg twice daily, up to 80mg twice daily	10-20mg twice daily
Topiramate	25mg once daily, up to 100mg daily (in divided doses, e.g. morning and night)	25mg
Candesartan	4mg once daily, up to 16mg daily	4mg
Second-line options (evidence limited and/or side effects limiting)		
Venlafaxine	150mg once daily	
Pizotifen	0.5mg at night, up to 1.5mg three times a day	0.5mg
Sodium valproate	200mg twice daily, up to 1500mg in total	200mg
Third-line options (limited access and/or costly/not funded)		
Galcanezumab	240mg loading dose then 120g every 4 weeks (self-injection)	None
Erenumab	70-140mg every 4 weeks (self-injection)	None
Atogepant	60mg once daily	None
Chronic migraine only (headache on 15 days or more a month)		
Onabotulinumtoxin A (Botox™)	Injection into 31 head and neck sites, repeated every 12 weeks by a health professional	None

*Consider nortripytline if amitriptyline is too sedating;
**Other beta-blockers can also be used (e.g. metoprolol, timolol, nadolol, atenolol)

When to seek specialist advice

Most migraine can be managed by a GP in primary care but there are circumstances where review by a specialist is advisable. These include:

- Migraine that is poorly controlled after trials of three or more preventive medications, where these haven't worked or caused side effects
- Rare migraine types (e.g. hemiplegic migraine, migraine with brainstem aura)
- Where there is a sudden or significant change in migraine symptoms
- Where the diagnosis of migraine is in doubt or there is a suspicion of another cause for headache.

References

Ailani J, Burch RC, Robbins MS; Board of Directors of the American Headache Society. The American Headache Society Consensus Statement: Update on integrating new migraine treatments into clinical practice. Headache. 2021 Jul;61(7):1021-1039.

Ashina M, Buse DC, Ashina H, et al. Migraine: integrated approaches to clinical management and emerging treatments. Lancet. 2021 Apr 17;397(10283):1505-1518.

British Association for the Study of Headache (BASH). 2019. National Headache Management System for Adults 2019. http://www.bash.org.uk/guidelines/
Collins T. Migraine Headache in Adults. BMJ Best Practice. 2023. https://bestpractice.bmj.com/topics/en-gb/10

Diener H-C, Holle-Lee D, Nägel S, et al. Treatment of migraine attacks and prevention of migraine: Guidelines by the German Migraine and Headache Society and the German Society of Neurology. Clinical and Translational Neuroscience. 2019; 3(1):1-40.

Eigenbrodt AK, Ashina H, Khan S, et al. Diagnosis and management of migraine in ten steps. Nat Rev Neurol. 2021;17:501-514.

Hovaguimian A, Roth J. State of the art review: Management of chronic migraine. BMJ. 2021;379(e067670).

International Headache Society. International Classification of Headache Disorders, 3rd edition. 2018. https://ichd-3.org

Mottershead, J. How to treat: Headache. New Zealand Doctor. 2021 Sep 1: 31-35.

Scottish Intercollegiate Guidelines Network (SIGN). Pharmacological Management of Migraine: A National Clinical Guideline (SIGN 155); 2018. www.nice.org.uk/

Shamliyan TA, Choi JY, Ramakrishnan R, et al. Preventive Pharmacologic Treatments for Episodic Migraine in Adults. J Gen Intern Med. 2013;28(9):1225-1262.

Silberstein SD, Holland S, Freitag F, et al. Evidence-based guideline update: Pharmacologic treatment for episodic migraine prevention in adults: Report of the Quality Standards Subcommittee of the American Academy of Neurology and the American Headache Society. Neurology. 2012;78(17):1337.