Lipton RB, Buse DC, Nahas SJ, et al. Risk factors for migraine disease progression: A narrative review for a patient-centered approach. *Journal of Neurology.* 2023.
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Supplementary Table 1. Printable summary of key risk factors of migraine disease progression and possible protective actions

	Risk factors	Level of evidence	Possible protective actions	Level of evidence
Migraine disease characteristics	• *Any migraine disease characteristic risk factor*		• Track attack frequency, severity, and treatment use through a diary or app • Optimize acute and preventive treatment using both pharmacologic and nonpharmacologic options • Educate patients on healthy lifestyle choices and how to implement change	O ↑ O
	• ≥5 MHDs (moderate risk) or ≥10 MHDs (high risk)	↔	• Progressive muscle relaxation	↔
	• Cutaneous allodynia	↑		
	• Persistent, frequent nausea	↔		
Suboptimal treatment	• *Any treatment-related factor*		• Use nonpharmacologic approaches such as neuromodulation and biobehavioral therapies • Change dose or route of administration • Add or switch to another acute or preventive medication • Add preventive therapies • Optimize adherence	↔ O O O O
	• Suboptimal acute treatment	↑	• Optimize acute migraine medication • Educate patients about their acute migraine medication	O O
	• Acute medication overuse	↑	• Educate patients about appropriate exposure to acute migraine medication and risks of high use • Limit acute medication use to <8 days/month	O O
	• Preventive medication not satisfactorily effective/tolerated	O	• Optimize preventive medication • Aim for treatment to reduce days of moderate or severe pain to <4 days per month • Take preventive medication as prescribed • Consider adding nonpharmacologic preventive options	↑ O O O
Comorbidities	• *Any comorbidity*		• Identify common comorbidities and educate patients on comorbid conditions • Optimize assessment and treatment of comorbid conditions where appropriate • Refer for treatment when appropriate • Teach self-management skills and strategies when appropriate	O O O O
	• Psychiatric symptoms, especially depression and anxiety	↑	• Assess, monitor, treat, or refer to mental health professionals for pharmacologic and/or behavioral treatment	O
	• Other (non-headache) chronic pain conditions	↑		
	• Head and neck injury, TBI	↔	• Physical therapy	O

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	Risk factors	Level of evidence	Possible protective actions	Level of evidence
	• Metabolism-related comorbidities (metabolic syndrome, insulin resistance, overweight/underweight)	↑	• Exercise/physical activity • Diet • Optimized disease management	O O O
	• Sleep disturbances, including insomnia, snoring, and restless leg syndrome	↑	• Healthy sleep hygiene and practices • Targeted behavioral sleep intervention • May need a sleep study (obstructive sleep apnea) • May need CBTi (insomnia)	O ↔ ↔ ↔
	• Respiratory conditions such as allergic rhinitis and asthma	↑		
	• Multiple other comorbidities	↔		
Lifestyle and exogenous factors	• *Any lifestyle or exogenous risk factor*		• Self-management strategies and programs	↔
	• Stress, including adverse childhood experiences, stressful life events, previous assault	↔	• Refer for therapy and support • Stress management, CBT, biofeedback, relaxation training, exercise, social support • Foster resilience	O O O
	• Poor nutrition	↔	• Eat regular, balanced meals	O
	• Poor hydration	↔	• Stay hydrated with water and other hydrating liquids • Provide access resources such as a note for work to allow more access to water	O O
	• Former and current high caffeine intake	↑	• Reduce caffeine intake to no more than 2 caffeinated beverages a day	O
	• Physical inactivity	↑	• Regular exercise/physical activity	↔
	• Poor sleep quality and duration	↔	• Healthy sleep hygiene and practices	↔
	• Smoking tobacco	↑	• Tobacco cessation	O
	• Exposure to personal triggers	↑	• Keep a headache diary to identify triggers	↔
Demographic factors	• Female sex	↔		
	• Hormonal status	↔		
	• Low level of education attainment	↔		
	• Ongoing financial constraints	↑		

Level of evidence (for the risk factor association with progression, or that addressing the risk factor reduces progression risk): ↑ = good evidence; ↔ = moderate evidence; O = expert opinion.

CBT, cognitive behavioral therapy; CBTi, cognitive behavioral therapy for insomnia; MHDs, monthly headache days; TBI, traumatic brain injury.