

Behavioral and Integrative Therapies for Headache

Many patients who may benefit from these treatments may not be aware nonpharmacologic approaches exist.

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People often search for nonprescription approaches to headache management. Research shows that 28% to 82% of persons with headache disorders use nondrug treatment approaches, and around 50% of patients do not discuss their nondrug treatments with their healthcare providers (HCPs).^{1,2} As increasing numbers of individuals request integrative treatment, it is pertinent to raise awareness of the evidence-based options that are available (Table 1).

Behavioral and Psychologic Factors in Headache

Migraine is fundamentally a neurologic disorder involving the central nervous system (CNS). Decades of research also point to the key role of behavioral and environmental factors that influence the onset and maintenance of headaches³ and show that individuals can learn behaviors that can improve the course of the disorder. Common factors that influence headaches can be assessed for during initial intake (Box 1).

Stress

Stress is the most commonly cited trigger for migraines.⁴ The physiologic stress response is well-known and involves CNS arousal, which can produce hormonal and chemical changes (eg, cortisol) affecting muscle tension, heart rate, and gastrointestinal function. In susceptible people, these changes can increase risk for headache onset and progression. Stress can be categorized as acute and time-limited (eg, argument with spouse) or chronic (eg, ongoing marital discord). Chronic stress can promote central sensitization, promoting heightened responses to painful stimuli, delayed recovery from pain, and increased stress-related headaches.⁵ Headaches may have onset immediately after a stress trigger, be delayed by as much as 2 days, or occur during a period of calm following resolution of stressor (also known as a *let-down headache*). Providers can inquire about recent life changes or ongoing areas of stress to determine appropriateness for additional stress-management intervention.

TABLE 1. TREATMENT MODALITIES

Natural products	Riboflavin
	Magnesium
	CoQ10
	Butterbur ^a
	Feverfew
	Omega-3 fatty acids
	Vitamin D ₃
Mind-body medicine	Melatonin
	Cognitive-behavioral therapy
	Acceptance-commitment therapy
	Meditation
	Biofeedback
	Exercise
Manipulative and body-based	Hypnosis
	Massage
	Chiropractic
	Acupuncture
	Craniosacral

^a If certified free of pyrrolizidine alkaloids with liver monitoring.

Coping

The behavioral and cognitive strategies used by an individual to manage or adapt to headaches can also affect the course of headaches. In general, the use of passive or avoidant coping strategies (eg, overrestriction of activity, overusing medication, or social withdrawal) are associated with increased headache severity and more disability.^{6,7} Such strategies may serve to increase the impact of the stressor by worsening mood and creating new stressors (eg, isolation, lost income). Some patients also cope with pain by excessively anticipating or focusing on the headache and expecting drastic consequences (termed catastrophizing). Catastrophizing

▶▶▶ **Box 1. People Most Likely to Benefit From Integrative Medicine**

- Individuals who are highly sensitive to conventional treatments
- Individuals who express a preference for nonconventional treatments
- Individuals who have exhausted conventional treatments in adequate trials

can magnify pain sensations and disability.⁸ In contrast, active and solution-focused coping strategies (eg, utilizing relaxation skills, problem solving, and seeking support) are associated with less emotional distress and less disability.⁹ When working with persons struggling with passive coping or catastrophizing, encouraging efforts to cope with pain (eg, asking “how are you trying to manage your headache?” vs “how is your headache today?”) and minimizing attention to pain behaviors can be helpful once a relationship is established.¹⁰

Headache-Related Beliefs

The extent to which people believe they do or do not have control in managing their headaches affects the course of the headaches. Individuals with a higher sense of personal control and self-efficacy tend to have better treatment outcomes and lower disability,¹¹ whereas low sense of personal control and a belief that mostly external or random factors control headaches are associated with increased disability and greater risk of medication overuse.¹² Providers can promote an individual’s sense of control and self-efficacy through examining headache diaries to elucidate patterns (eg, dehydration triggering headaches) that patients can actively control and help set daily goals towards management (eg, tracking water intake).

Psychiatric Comorbidities

Individuals with migraine disorder have a disproportionately higher risk of psychiatric comorbidities. Migraine patients are at least 3 times more likely to suffer from major depressive disorder and 5 times more likely to develop an anxiety disorder.¹³ The relationship appears bidirectional, in that migraine increases the risk for developing a mood/anxiety disorder, and a mood/anxiety disorder increases vulnerability to migraine episodes.¹⁴ Comorbid mood and anxiety disorders are associated with greater disability, increased frequency of migraine, increased risk of chronification of headache, and poorer prognosis and response to medical treatment.¹⁵⁻¹⁷ Owing to symptoms of hopelessness, individuals with depression might be more likely to give up on treatment while medications are being adjusted. Individuals with anxiety might be hyperattuned to physical sensations, fearful of headaches, and more likely to overuse medication when detecting physiologic changes. Although less studied, there is evidence for increased

prevalence of bipolar disorder and personality disorder among those receiving inpatient treatment for migraine.^{18,19} Given the high prevalence of psychiatric comorbidity and implications on prognosis, screening for mood and anxiety disorders during initial assessment is recommended. Screening tools such as the Patient Health Questionnaire (PHQ)-9 for depression and Generalized Anxiety Disorder 7-item (GAD-7) scale for anxiety are brief, easy to administer, and designed for primary care use.^{20,21} Responses may provide basis for further conversation and/or referral to behavioral health specialties.

Lifestyle Factors

Stability in lifestyle habits is key to the management of migraine. Behavioral factors that most commonly promote or exacerbate migraine episodes include inconsistent dietary habits, inadequate sleep, and diminished physical activity. Disrupted sleep patterns and sleep disorders (eg, insomnia or obstructive sleep apnea [OSA]) are more prevalent among persons with migraine.²² Thus, providers can assess for sleep disturbances and refer to sleep medicine specialists when warranted. Keeping a diary is one of the most effective strategies for identifying triggers.²³

Behavioral Therapies

The broad goal of behavioral approaches is to reduce headache frequency, severity, and associated disability while enhancing patient control (Table 2). Treatments are often delivered in combination (eg, relaxation training with cognitive behavioral therapy [CBT]). Whereas medical providers can coach patients in trigger management, medication adherence, and even certain relaxation exercises (eg, deep breathing) if knowledgeable, referral to behavioral health professionals with specialized training in applying behavioral models to headache disorders is recommended for biofeedback, CBT, and mindfulness therapies. Individuals with more severe psychiatric symptoms (eg, psychosis or severe post-traumatic stress disorder [PTSD]) that are uncontrolled and significantly inhibit function are typically poor candidates for standard behavioral therapy, as psychiatric symptoms interfere with ability to learn and practice skills.³² These individuals would benefit from referrals to specialized psychiatric professionals to first obtain management of psychiatric symptoms before engaging in behavioral headache management. In outpatient mental health centers, behavioral treatments for headaches are typically delivered in 8 to 12 weekly sessions. In integrated medical settings, treatments are typically less frequent and delivered in 3 to 5 biweekly or monthly in-person sessions, usually with in-between phone check-ins to monitor adherence.

When suggesting behavioral treatment, physicians can increase patient collaboration and reduce stigma by presenting migraine as a biologic disorder of the nervous system resulting in a hypersensitized or excitable brain. Trigger

TABLE 2. EVIDENCE-BASED BEHAVIORAL TREATMENTS FOR HEADACHE

Treatment (Evidence) ^a	Treatment goals	Example interventions	Evidence-based results
Relaxation training ^{3,24} (Grade A)	Modify headache-related responses and reduce stress-related arousal Decrease muscular tension, particularly beneficial for somatic symptoms	Progressive muscle relaxation Diaphragmatic breathing Autogenic training Self-hypnosis	Reduced headache frequency and missed work days More effective when combined with CBT
Biofeedback ²⁵ (Grade A)	Self-regulate typically nonvoluntary responses (eg, body temperature) Use devices to monitor headache-related responses to view and control	Thermal biofeedback to raise body temperature reduces sympathetic arousal and EMG biofeedback to reduce muscle tension	Thermal feedback most effective when combined with relaxation training
CBT ^{26,27} (Grade A)	Recognize and cope more effectively with stressful situations Target thoughts/emotions not directly addressed in relaxation and biofeedback Reduce perceived trigger avoidance Target comorbid mood/anxiety disorders	Monitoring of stressful situations/responses Modification of unhelpful thoughts (“I can cope” vs “I will be disabled”) Coping skills/problem-solving Trigger management	Reduced headache frequency, severity, and disability Reduced depression/anxiety Improved quality of life Reduced catastrophizing and increased positive coping
Mindfulness therapies ^{2,28,29} (Emerging evidence from small trials)	Accept pain while distancing from pain-related thoughts Reduce emotional suffering and magnification of pain sensations Pay attention moment-to-moment experience with acceptance of change	MBSR (8 weeks) emphasizing formal mindfulness meditation and movement-based practices Mindfulness-based cognitive therapy, adapted from MBSR, emphasizing identifying negative thinking patterns Acceptance and commitment therapy for mindfulness with emphasis on engaging in valued behaviors	Reduced headache frequency and duration Reduced disability Improved self-efficacy Reduced catastrophizing and increased acceptance
CBT-I ³⁰ (Small, growing evidence)	Change underlying behaviors and thoughts that maintain insomnia	Strategies for reducing conditioned arousal and racing thoughts at night	Reduced headache frequency Typically, effective in 4-6 sessions

^aGrade A = strongest research support as per 2000 US Headache Consortium Guidelines³¹; may consider as front-line treatment. Abbreviations: CBT, cognitive-behavioral therapy; CBT-I, cognitive-behavioral therapy-insomnia; MBSR, mindfulness-based stress reduction

management, preventive medications, and relaxation can be understood as methods to help stabilize the brain. Explaining that physiologic components of stress can activate migraine drivers presents a rationale for relaxation and stress-management training to “retrain” the brain to respond differently to stressors. The benefits of such interventions can be aligned with patients’ personal treatment goals (eg, miss fewer days of work). It is also important for patients to understand that like any skill, behavioral skills require time and practice to master and are meant to supplement, not replace medical treatment.

Candidates for Behavioral or Integrative Therapy

The standard clinical interview can include assessment of behavioral and lifestyle factors. Providers can proactively discuss options for combining nonpharmacologic approaches with existing treatment. Use of open-ended statements such as “Tell me about your headaches and how they affect your life?” to gauge patients’ priorities, beliefs, and the functional impact of headaches may be beneficial.²³ This approach also

sets the stage for the patient to be an active participant in self-management. Nearly all persons with headache will benefit from education regarding headache course, trigger management, lifestyle modification, and proper use of medications. Characteristics of patients who would benefit from additional behavioral and/or integrative therapy for headache management are summarized in Table 3.

Conclusion

A useful mnemonic when discussing integrative medicine with patients is CARE (Box 2). It is helpful to ask individuals about their conventional therapy experiences first. Those with adverse effects from conventional therapy, for example, may prefer nonpharmacologic approaches. It is also imperative to avoid judgement when discussing a patient’s previous experiences, so that the patient can be honest about which integrative approaches they may have tried or may already be using. Finally, in addition to exploring why the patient is interested in integrative medicine, it is important

TABLE 3. REFERRAL FOR BEHAVIORAL/INTEGRATIVE HEADACHE THERAPY

Patients to consider for integrative/behavioral therapy	At least 1 headache/week
	Significant disability from migraine
	Psychologic comorbidities
	Interested in behavioral treatment
	Significant life stress or poor coping skills
	Poor tolerance of or response to medication
	Medical contraindications for pharmacologic interventions
	Pregnancy, planned pregnancy, or nursing
	Prior positive response to nonpharmacologic interventions
Patients with limited prognosis for integrative/behavioral therapy	Infrequent migraine, primarily triggered by menstruation hormone change (refer to obstetrics-gynecology department)
	Well-controlled migraine
	Severe and disabling psychiatric problems (refer to psychiatrist)
	Uninterested in behavioral treatment or lifestyle changes
	Low perceived stress; no problems with mood or anxiety
	Poorly managed personality disorder (refer to psychiatry professional)
	Severe cognitive impairment or traumatic brain injury (refer to cognitive neurologist)
	Current substance abuse
	History of nonadherence to treatment

to review the various integrative approaches as well as their limitations. An increasing number of patients with headache disorders are requesting integrative and nonpharmacologic approaches to managing headaches. A growing body of evidence supports the efficacy of these approaches and ability to benefit many individuals. Providers are thus encouraged to assess for appropriateness of integrative approaches and proactively discuss these options with their patients, as many may be unaware that these therapies exist. ■

▶▶▶ Box 2. CARE Mnemonic

- Conventional therapy experiences
- Avoid judgement
- Review integrative approaches and their limitations
- Explore why person is interested

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Disclosures

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