INTEGRATIVE HEALTH APPROACHES FOR TREATING MIGRAINES POCKET GUIDE

FAST FACTS

- In the United States it is estimated that around 20% of the population is affected by migraine headaches. However, because they are often misdiagnosed, the percentage is actually believed to be much higher.[i]
- According to the American Migraine Foundation, one in four households in the United States has at least one person suffering from migraine headaches.[ii]
- Depression and anxiety are more common in people with migraine headaches than in those without.[iii]
- According to the Global Burden of Disease Study, migraine headaches are a leading cause of disability worldwide especially within the 15-49 age range.[iv]
- Migraine attacks are 3 times more common in women.[v]

WHAT ARE MIGRAINE HEADACHES?

Migraine headaches cause a painful throbbing or intense pulsating usually in one side or area of the head. Migraine headaches can last anywhere from 4 to 72 hours and are reoccurring. The pain experienced during a migraine headache can be so intense that it interferes with daily activities.

When experiencing a migraine headache (with and without aura) common associated symptoms are nausea, pain related with moving the head, vomiting, neck pain, and increased sensitivity to smells, light, and noise.

A migraine headache can present with or without aura. An aura is a sense or sensation that usually *precedes* the headache and can include visual blind spots, temporary blindness, tingling in your face or hands, flashes of light, and/or other visual changes. A migraine with aura (sometimes referred to as a "classic migraine") is a headache that coincides with or occurs shortly after these visual or other sensory disturbances.

Although once considered a vascular headache disorder, recent advances in the understanding of migraine headaches have found that migraine headaches are a "complex, variable disorder of nervous system function."[vi] This means that scientists do not fully understand the physiology of migraine headaches at this time.

Migraine headaches can appear in stages:[vii][1]

Prodrome

Prior to experiencing a migraine headache (one to two days), changes in the following may occur:

- Mood
- Neck stiffness
- Food cravings
- Constipation
- Increased yawning
- More frequent urination
- Increased thirst

Aura

People may experience an aura before or during migraines or not at all. An aura is a nervous system disturbance that is reversible and is usually experienced visually but can also manifest in other ways. These symptoms usually appear gradually and then are present for up to an hour. Some examples of aura include:

- Bright flashes of light
- Blurred vision
- Temporary blindness
- Pins and needles in arms and legs
- Loss of hearing
- Trouble speaking
- Auditory disturbances
- Numbness on one side of the body

[1] Please note, not everyone with migraine headaches will experience these stages.

Attack

A migraine attack can last anywhere from a few hours to three days (72 hours) depending on whether you treat the migraine and if the intervention is effective. People may experience migraines rarely or several times a month or week. In severe cases, migraines can present themselves daily. You may experience the following during a migraine:

- **Pulsating or throbbing pain on one or both sides of your head**
- **Nausea and/or vomiting**
- **Sensitivity to sound, light, smells, and touch**

Postdrome

Once the migraine attack has ended, you may experience fatigue, feel drained, and/or confused. However, some people report feeling elation. Please note that sudden head movements may cause the pain to return briefly.

Migraine Triggers

Migraines can be triggered by a number of different variables, including: [vii]

- Hormones- Estrogen fluctuations can trigger migraines so events such as having your period, menopause, and pregnancy can cause migraine headaches. Taking an oral contraception and/or hormone replacement therapy can increase migraine headaches. Nevertheless, some women have reported that their migraine headaches have decreased when taking oral contraception or hormones.
- Alcohol (especially wine)
- Too much caffeine or caffeine withdrawal
- Stress
- Anxiety
- Intense sensory stimuli (such as strong sunlight or loud noises)
- Strong scents and odors
- Tobacco use
- Medications
- Too much or too little sleep
- Fasting or skipping meals
- Aspartame
- Monosodium glutamate (MSG)
- Exercise (frequency and intensity can impact the development of migraine headaches)
- Certain foods can sometimes trigger migraines on an individual basis

Consistency is key to migraine prevention. Migraines are often triggered by changes in schedule, eating behaviors, and sleep patterns.

What are the conventional ways of treating migraine headaches?

There is no universal cure for migraine headaches and no absolute way to prevent a migraine from happening. Nevertheless, prevention and treatment of migraine headaches is crucial and effective. Research has shown that after each migraine attack, another attack becomes more likely with some people developing chronic daily migraines. With the proper treatment, migraine headache attacks can significantly decrease and even become rare. [v] Conventional treatments for migraine headaches include medication and behavioral approaches (such as tracking migraine triggers and psychotherapy).

Pharmaceutical Interventions

There are three main types of medications recommended or prescribed to people with migraine headaches:

1. Medications that lessen migraine pain
   - Acetaminophen
   - Naproxen
   - Ibuprofen
   - Barbiturates
   - Narcotics
   - Dichloralphenazone
2. Medications that help prevent migraines by constricting blood vessels and interrupting the chain of chemical reactions believed to cause migraine headaches (triptans)
3. CGRP mAbs are a new class of drugs used to prevent migraine headaches as well as decrease their pain and intensity. This class of drugs work by interrupting or antagonizing the effect of the calcitonin gene-related peptide (CGRP) which is a small protein found in the nerves in the head and neck and is involved in pain transmission. During migraine attacks, levels of CGRP increase and it is hypothesized that these proteins may be responsible for migraine attacks. There are two types of CGRP inhibitor medications:

- **Monoclonal antibodies:** These are usually given as an injection over a series of months or quarterly and are used as a preventative. These drugs take longer to start working but are considered safe because there are few drug interactions, few side effects, they do not cross the blood brain barrier in high concentrations, and there is no real risk of kidney or liver

damage. Examples of CGRP inhibitors that are monoclonal antibodies and have been approved by the FDA for migraine prevention include:
  - Aimovig (erenumab-aooe)
  - Ajovy (fremanezumab)
  - Emgality (galcanezumab-gnlm
  - Vyepti (eptinezumab-jjmr)
- **CGRP receptor antagonists (gepants):** These are pills can be taken as a preventative or during a migraine attack to decrease pain. These drugs work quickly because they penetrate the brain. However, because they are metabolized by the liver, they can potentially interact with other medications or cause liver damage. Examples of CGRP inhibitors that are receptor antagonists and have been approved by the FDA for migraine prevention and acute treatment include:
  - Ubrelvy (ubrogepant)
  - Nurtec ODT (rimegepant sulfate)

When migraine sufferers begin to experience headaches weekly, doctors will start to focus on other medications that may assist with migraine prevention. Acute medications should not be used for more than 10 days a month. If you have more than 4 headache days a month, it is important to look into ways to prevent future migraines.

Some people with chronic migraine headaches have also found medications typically prescribed for other chronic conditions can be effective. These medications include antidepressants, antihistamines, herbal medications, anti-seizure medications, and some blood pressure medications.

Botulinum toxin injections have also been used to help with migraine prevention.

To learn more about the recommended use and appropriateness of the above pharmaceutical interventions to help prevent and treat migraine headaches, please visit the following resources:

- American Headache Society's Prescription Preventives for Migraine Guide see here: https://americanheadachesociety.org/wp-content/uploads/2020/10/AHS_Preventive_Treatment_Spinoff-V1.1.pdf
- American Headache Society's Selecting an Acute Treatment for a Migraine Patient see here: https://americanheadachesociety.org/news/acute-treatment-for-migraine/
- European Headache Federation's Guideline for the Treatment of Headache see here: https://ehf-org.org/wp-content/uploads/2013/12/JHP-suppl-S1-S47_by-Paolo.pdf

Behavioral/Therapeutic Interventions

Although medication is usually the first line of defense, behavioral interventions can be very effective in keeping migraine headaches at bay.

Tracking Migraine Triggers

It is important for people with migraine headaches to keep a log of their personal triggers. Understanding the role of lifestyle factors such as stress, anxiety, eating patterns, exercise, sleep, medication, food, and drink can help paint a picture of what factors under the individual's control are influencing the development of their migraines.

Food and Diet

A number of studies have looked at the impact of food choice as it relates to migraine triggers and frequency.

A systematic review of 43 randomized control trials on the role of diet and nutrition in migraine triggers found that alcohol and caffeine were the most common migraine triggers.[viii]

The consumption of certain foods is also reported as a migraine trigger. An observational study looked at diet quality in 164 women with chronic migraines and 169 women with episodic migraines. The quality of the participants' diets were analyzed using the Healthy Eating Index- 2015 (HEI) and classified into three diet-quality groups: "poor," "needs improvement," and "good." Women who had chronic migraines scored significantly lower on the HEI indicating that their diet was not as nutrient rich (according to the Dietary Guidelines for Americans). Additionally, higher scores on the HEI were negatively correlated with chronic migraines.[ix] In other words, the better your diet the less problems with migraines.

Dehydration and lack of water consumption are also migraine triggers. A study looking at water consumption found that those who consumed the most water had the lowest pain severity, shortest headaches duration, decreased migraine disability, and migraine frequency (all $P < 0.001$).

Psychotherapy

Given that lifestyle factors can play a large role in the development of a migraine attack, some migraine sufferers find relief in seeing a psychotherapist. Studies have found that people with migraines report experiencing significantly more perceived stress and higher levels of depression than healthy controls and are more likely to be diagnosed with anxiety and/or depression.[x] Additionally, 80% of participants in a research study reported stress as a migraine trigger.[xi] Seeking the counsel of a trained psychotherapist and incorporating stress reduction methods is a key step for addressing triggers and reducing the impact migraine headaches have on an individual's life.

Side Effects/Safety Concerns

Psychotherapy, when delivered by a well-trained certified therapist, is widely considered a safe way of addressing migraine triggers and reducing the impact of migraines on day-to-day living. Note that any form of therapy can unearth uncomfortable emotions and may cause you to experience increased levels of psychological discomfort.

Evidence

Systematic reviews on the use of psychotherapy to assist in migraine prevention and reduction have found that some studies report anywhere from a 20-67% improvement in migraine headache symptoms with psychotherapy alone.[xii]

A systematic review performed by Cochrane did not find that psychotherapeutic interventions had long-lasting effects on migraine headache frequency or the number of migraine days. However, small numbers of participants, a lack of high quality evidence, and long-term follow up (only 4 studies followed patients over a long period of time) may have influenced study results.[xiii]

The Mayo Clinic and the American Migraine Foundation both include a type of psychotherapy, called Cognitive Behavioral Therapy (CBT), in their recommended behavioral interventions to address migraine headache frequency and stress related triggers. A systematic review of 10 research studies on CBT found that 7 of the 10 research studies reported significant benefits to engaging in CBT in comparison to a no treatment control group, or those treated with antidepressants and relaxation techniques.[xiv] Interestingly, CBT plus relaxation and CBT plus placebo were more statistically significant than taking antidepressants alone or antidepressants plus CBT. However, due to the heterogeneity of the research designs and methodological inadequacies, more studies are needed to truly understand the role of CBT for people experiencing migraine headaches.

To better understand the process of psychotherapy and begin looking for a therapist and ways that psychotherapy can help you, please visit: https://www.nimh.nih.gov/health/topics/psychotherapies/index.shtml

Neuromodulation Devices

Neuromodulation devices are designed to modulate or manipulate nervous system activity to reduce migraine headache frequency and intensity. Most neuromodulation devices require the administration or supervision of a physician or a prescription. These devices are reported to not only be preventative but can also be used during a migraine attack to address pain.

Neuromodulation devices can be an attractive alternative for people who have conditions or health issues that do not allow them to take migraine headache medication. Examples of neuromodulation devices that have been Food and Drug Administration (FDA) approved are:

- Supraorbital Transcutaneous Neurostimulation (STNS)
- Single-Pulse Transcranial Magnetic Stimulation (sTMS)
- Noninvasive Vagal Nerve Stimulation (nVNS)
- Trigeminal Nerve Stimulator (eTNS)

Neuromodulation devices that are still under investigation and are not currently FDA approved or readily available include:

- Auricular Noninvasive Vagal Nerve Stimulation (auricular t-VNS)
- Transcranial Direct Current Stimulation (tDCS)
- Percutaneous Mastoid Electrical Stimulation (PMES)
- Transcutaneous Occipital Nerve Stimulation (tONS)
- Caloric Vestibular Stimulation (CVS)

To learn more about the different types of neuromodulation devices, please visit: https://headachejournal.onlinelibrary.wiley.com/doi/full/10.1111/head.13586

The Federal Drug Administration recently approved the first over-the-counter Trigeminal Nerve Stimulator (eTNS) neuromodulation device to use at home. CEFALY® is placed on your forehead and sends small electrical impulses to stimulate the trigeminal nerve. It is reported that this device not only reduces the frequency of migraine headaches but also acute migraine attack intensity. To learn more about this device, please visit their website here: www.cefaly.com

Remote Electrical Neuromodulation (RENs) Devices

An alternative to trigeminal nerve stimulation, non-invasive vagus nerve stimulation, and single-pulse transcranial magnetic stimulation are remote electronic neuromodulation (RENs) devices. The RENs device is newly approved for at home use by the FDA and is designed to address the acute pain caused by migraine attacks. The RENs device is also non-invasive, battery operated, wearable, wireless, and is controlled by the patient through a smartphone application. The device is worn for 45 minutes, is placed on the lateral upper arm, and uses electrical signals to stimulate peripheral nerves causing the release of the neurotransmitters serotonin and noradrenalin which have an analgesic effect. RENs have little side effects and can be used in conjunction with other treatments.

Recent peer-reviewed published research studies on the RENS devices show promise for addressing acute migraine attacks in both adults and children.

Are there integrative health approaches to treating migraine headaches?

It is estimated that over 50% of people with migraine headaches use integrative medicine approaches to prevent and address their migraine symptoms.[xv] Integrative medicine practices may not only help address migraine triggers and frequency of attacks, but also decrease migraine related symptoms during an attack.

Acupuncture

Acupuncture is a practice in which a trained specialist called an acupuncturist stimulates specific points on the skin called acupoints, usually with a needle. Stimulating acupoints increases the release of chemicals like endorphins (naturally-produced pain reducers) in the body and brain. These chemicals may directly impact how a person experiences pain.

Side Effects

- Slight bleeding and bruising at the acupoint site
- Fainting
- Convulsions (rare)
- Pain or soreness at the acupoint site (which may be important for effectiveness)

Evidence

A Cochrane systematic review of 22 trials (with 4,985 participants) on the effectiveness of acupuncture for the prevention of episodic migraine concluded that adding acupuncture is an effective adjunctive treatment to usual care for people with migraine headaches.[xvi]

Another systematic review and meta-analysis of 28 randomized control trials (with 2,874 patients) on the impact of acupuncture on migraines reported that acupuncture had less adverse side effects, was more effective, and improved intracranial blood circulation when compared with medications. The authors also reported that acupuncture lowered pain scores, reduced the frequency of migraine attacks, and increased treatment effectiveness more than sham (placebo) acupuncture.[xvii]

Exercise

Although for some people exercise can trigger migraine headaches, there is a body of evidence supporting its use for the prevention of future migraines. This is especially true when you exercise consistently and develop a routine. Large population-based studies have found that lack of exercise is associated with increased frequency of migraine headaches.[xviii] Nevertheless, excessive and intense exercise can also be a migraine trigger.[xix]

Side Effects

If you exercise with approval from your physician and the supervision of a trainer, side effects are minimal. Additionally, as exercise can be a migraine trigger, instituting an exercise regime that is not excessive or too intense and is followed consistently is important.

Some possible side effects include:

- Fatigue
- Pain and soreness
- Injuries
- Developing exercise obsession
- Migraine headache

Research

A systematic review and meta-analysis of 6 randomized control trials (357 total patients) found that there is moderate quality evidence that aerobic exercise therapy decreases the number of migraine days. Additionally, a review of the individual studies showed reductions in pain intensity (ranging from 20-54%) and attack duration (ranging from 20-27%).[xx]

A randomized control trial looking at aerobic exercise (45 minutes, 3 times/week bike/cross-trainer/brisk walking) to help treat migraine headaches found that those in the exercise group, in comparison to the control group, experienced a significant reduction in migraine headache burden and increased ability to participate in exercise activities. Compared to the beginning of the study, the exercise group also experienced a significant reduction in pain intensity, duration, and migraine frequency.[xxi]

Mindfulness Meditation

Meditation is a practice that involves consciously exerting control over breathing and attending nonjudgmentally to the present moment. It produces multiple physiological and chemical effects such as decreased heart rate, blood pressure, and cortisol (stress hormone) levels.

Side Effects

Meditation is widely considered a safe way of addressing physical and mental symptoms; side effects are rare.

- Although rare, there have been reports that engaging in breathwork has worsened symptoms of patients with psychiatric problems, such as anxiety. If you are attending a breathwork class, please make sure to alert your instructor of any condition you may have.
- Excessive, rapid breathing can drop carbon dioxide levels and change the pH of the blood, causing tingling, muscle cramps, light-headedness and, on rare occasions, seizures. If you are susceptible to seizures, consult your doctor before engaging in any type of meditation that includes intensive breathwork.

Research

A meta-analysis of 10 randomized control trials and 1 non-randomized, controlled clinical trial (with 315 patients included) looking at people with migraine or tension type headache found that mindfulness meditation significantly improved pain intensity and decreased headache frequency when compared with a control group. Specifically, mindfulness-based stress reduction (MBSR) had the greatest impact on pain intensity ($P < 0.000$) and an intervention of 8 weeks had the greatest impact on symptom reduction ($P < 0.000$).[xxii]

A randomized control trial looking at the impact of MBSR on 40 participants with the diagnosis of migraine and/or chronic tension-type headache found that headache pain and quality of life significantly improved after engaging in 8 weeks of MBSR.[xxiii]

Biofeedback

Biofeedback is a self-regulation technique in which an individual learns to control physiological processes through the monitoring of these processes on devices such as a computer screen or a personal device. The device or computer program converts these physiological processes into meaningful information (visual or auditory) which enables the participant to change these processes through the use of breath, posture, thoughts, and expressions.[xxiv]

Biofeedback has been found to help with relaxation, reduce stress, and decrease blood pressure. There are a number of different biofeedback methods including heart rate, brainwaves, breathing, temperature, muscle contraction, skin charge, and sweat gland activity.[xxv] Biofeedback can be done with or without a biofeedback trained professional.

Side Effects

Biofeedback is generally considered safe. If you have a medical condition and/or an implanted device, please speak with your doctor before starting Biofeedback.

Evidence

A study looked at 37 patients with migraine headaches who received an intervention of neurofeedback and biofeedback three times a week for an average of 6 months. The study found that the combined biofeedback and neurofeedback intervention was more effective in decreasing headache frequency than medication alone. Additionally, the impact of the intervention lasted for an average of 14.5 months after the 6 month treatment ended.[xxvi]

Another study looked at 27 patients with migraine headache who received eight, 30 minute sessions of a biofeedback intervention (EMG-biofeedback, temperature-biofeedback, and relaxation training) and were instructed to engage in progression muscle relaxation at home. The study found headache intensity significantly decreased after 8 sessions of the biofeedback intervention in comparison to the control group. The intervention also decreased headache frequency by 1.9 days and significantly improved headache-related disability, psychological stress, depression, anxiety, and irritation.[xxvii]

Supplements

Herbs and supplements involve taking a plant extract in liquid, powder, or pill form, usually orally, to either maintain or improve an individual's health. The most used herbs and supplements for migraines are similar to those that treat chronic pain (in that they decrease inflammation in the body), but some are used specifically for migraine headaches. These include:

- Curcumin
- Vitamin B1
- Feverfew
- Magnesium
- CoQ10

Several of these (especially CoQ10) may take a few months to be effective.

Side Effects

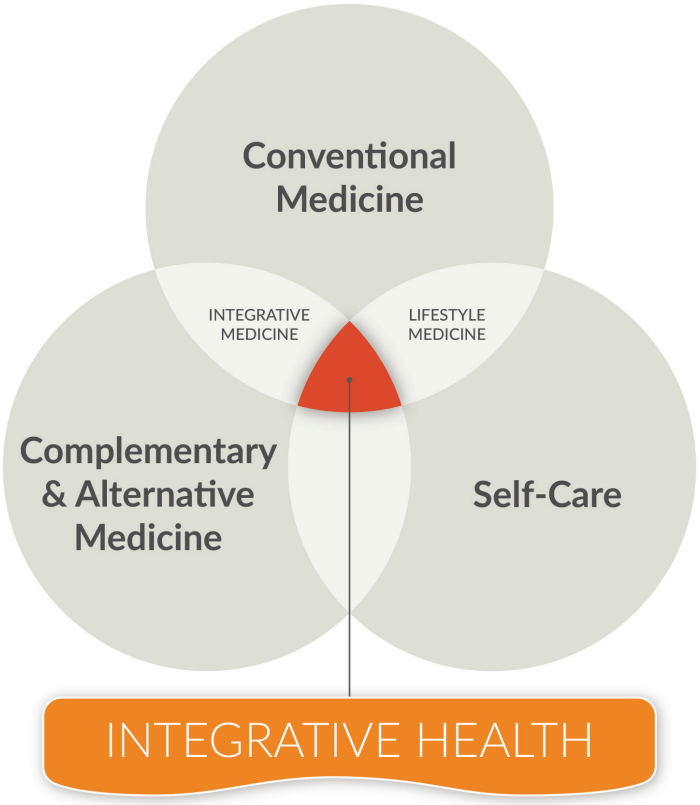
- To learn more about one or more of the above herbs or supplements and their potential side effects, please visit: https://www.mayoclinic.org/drugs-supplements or https://www.fda.gov/Food/DietarySupplements/UsingDietarySupplements/default.htm
- If you are currently taking prescription medication to treat your migraine headaches, do not begin taking supplements until you have spoken to your physician as there may be interactions that can occur with your medications.

Bottom Line

Conventional therapies work for migraine headaches and your doctor or primary care provider will most likely recommend or offer you those treatments first. Usually, you will be offered medications and told to track the behaviors, situations, and food choices that trigger migraines or increase their frequency. For people who find that life related stress and mental health issues, such as anxiety, trigger migraine headaches, psychotherapy (usually CBT) will be recommended. However, many find that adding integrative modalities (such as acupuncture, mindfulness, biofeedback, and/or vitamins or herbs) into their treatment plan can augment migraine prevention and decrease the frequency and intensity of their migraine headaches.

To review the latest research on Integrative Medicine interventions to address migraine headache symptoms, please visit this link: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6559232/

If you would like to learn more about how to find treatments for migraine headaches, please visit this link: https://www.mayoclinic.org/diseases-conditions/migraine-headache/diagnosis-treatment/drc-20360207



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