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A REVIEW ON: ANTI MIGRAINE AROMATHERAPY ROLL ON WITH INSTANT COOLING EFFECT

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Article History	Abstract
Received: 14-07-2025 Revised: 27-07-2025 Accepted: 12-09-2025	Migraines are the second leading cause of disability worldwide and one of the most common neurological disorders. Diagnosis is primarily clinical, based on history and examination, with imaging rarely required. The frequency of headache days determines whether a patient has episodic or chronic migraine. Attacks can last from four to seventy-two hours and cause significant disruption to daily life. Although headaches are widespread-affecting up to 90% of people annually-about 16-17% experience migraines specifically. Migraines result from complex changes in blood vessels and brain activity and are more prevalent in females, particularly during adolescence and later life, being twice as common in older women as in men. Treatment involves both acute management of attacks and preventive strategies. While medications may be needed for frequent or severe episodes, self-care and lifestyle modifications play key roles. Maintaining a healthy weight, eating a balanced diet, exercising regularly, getting adequate sleep, and managing stress are essential for prevention and overall wellbeing. Complementary approaches such as aromatherapy-using essential oils and plant extracts-are increasingly popular. Studies indicate aromatherapy may alleviate stress, anxiety, and depressive symptoms, promote relaxation, and reduce pain, thereby improving sleep quality. Ultimately, combining medical treatment with holistic practices can enhance recovery and reduce recurrence, offering an effective, practical approach to managing migraines.
<p>Keywords: Migraine; Headache disorder; Aromatherapy; Essential oils; Holistic management; Herbal therapy; Alternative medicine; Natural remedies.</p> 	

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Introduction to Migraine

A migraine is commonly defined as an intense, recurring headache that can occur several times per week or as infrequently as every few years. Episodes can last anywhere from a few hours to three days. The pain usually begins in the morning and affects one side of the head, which makes sense given that the word "migraine" is derived from a Greek term meaning "half-head." However, in some cases, the pain can spread throughout the entire head [1].

Migraine pain varies greatly in intensity. While the pain can be excruciating and almost intolerable for some, it is relatively mild for others. It goes without saying that managing daily activities, such as getting out of bed or even going to work, becomes more difficult the more severe the pain. However,

there are differences in how people handle migraines as well. Even with a mild episode, some people might need to rest, but others manage to endure more severe pain [2,3].

Curiously, our knowledge of migraines has been greatly influenced by research conducted in the last 15 years. Researchers now think that migraines are caused by a hyperexcitable brain, which is a brain that is abnormally sensitive and reactive to different stimuli, creating the conditions for these excruciating episodes [4].

A migraine is characterized by a strong, unilateral, throbbing headache. Associated with vomiting, phonophobia, photophobia, and nausea [5].

Trigeminovascular system activation has been found to be a major mechanism underlying migraines. Furthermore, the development of these conditions is greatly influenced by both environmental and genetic factors [6].

Pathophysiology of Migraine

For almost 600 years, people have been aware of headaches. The early seventeenth century saw the first recognition of the modern concept of chronic migraine. Initially, neurological or vascular mechanisms-including metabolic aspects of this-were

the main basis for the pathophysiology of migraine. Only recently was the disorder reported [7].

Migraine is divided Into Four Phases

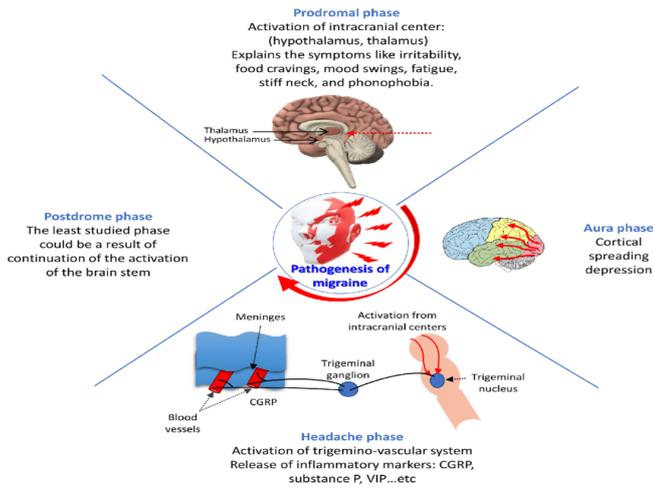


Figure 1: Mechanism of phases of migraine.8

Phase Premonitory (Migraine)

This stage usually starts as early as 72 hours before the actual migraine headache. These early indicators are frequently disregarded, even though they have been acknowledged in medical literature for years. This stage is often characterized by irritability, food cravings, mood swings, fatigue, stiff neck, and phonophobia, or sensitivity to sound [9].

These symptoms may persist into the headache and aura phases, indicating a link between hypothalamic activity and the premonitory phase. Increased blood flow in the hypothalamus has been demonstrated by brain imaging studies, underscoring its role in the early phases of a migraine attack [10].

For migraine sufferers, hunger, exposure to bright light, or a lack of sleep can either cause an attack or signal the onset of premonitory symptoms. Interestingly, the way these triggers are described differs between clinical studies and patient surveys. This difference is likely due to many patients misinterpreting what truly triggers their migraines or confusing these early warning signs with the actual causes of the attack [11].

Aura Phase

Approximately one-third of migraineurs go through the aura phase. The primary cause of it is cortical spreading depression (CSD), a transient electrical disturbance wave that propagates throughout the cortex of the brain. The primary pathological mechanism underlying the aura phase symptoms is this wave of depolarization in the brain [12].

Researchers have demonstrated that this mechanism is the main driver of the aura phase.

The retinotopic propagation of the visual cortex points to a potential role for CSD-induced migraines. Imaging studies have confirmed that this is the main characteristic phase of the aura. In contrast, a number of other studies have disproved the link between migraine and CSD [14].

Headache Phase

The headache phase is distinguished by pain on one side of the head (unilateral) that is throbbing or pulsating in nature. The level of pain can range from moderate to severe [15].

The neurovascular theory, which explains headache pain, states that the trigemino-vascular system is activated first,

followed by signals from higher brain regions like the thalamus and hypothalamus. As a result, the trigeminal ganglion-derived nociceptive fibers (pain-sensing nerves) that supply the duramater blood vessels become sensitive. These fibers release inflammatory chemicals such as substance P, vasoactive intestinal peptide (VIP), and calcitonin gene-related peptide (CGRP) [16].

Thalamo-cortical circuits, thalamic circuits and migraine

During the premonitory phase of a migraine, there are noticeable changes in brain function. Electrophysiological studies have revealed increased blood flow, particularly in the pathways that connect the thalamus and cortex. Both functional and structural imaging studies have revealed changes in thalamic activity and thalamocortical connections in migraine sufferers. Furthermore, imaging during a migraine attack has revealed distinct changes in thalamic activity, emphasizing the brain's altered functionality in these individuals [17].

Postdromal Phase

The postdromal stage of migraine is the least studied and frequently disregarded by both patients and researchers. Patients frequently do not report it, but for some, it may be a separate phase or just an extension of the underlying pathology of the migraine. People may suffer from exhaustion, weakened muscles, mood swings, difficulty focusing, and appetite loss during this stage. The brainstem and diencephalon's ongoing activation, which persists even after the pain signals have been processed, is a plausible explanation for these symptoms [18].

Types of Migraine

Traditional migraine or classical migraine

Classical migraine (aura-accompanied migraine) less 20% of migraine sufferers report having the Aura, the word for the indication that the Suffering. These can be characterized as the zigzag or the spots. Lines that appear before the eyes and are linked to blurred vision. Usually, these symptoms disappear in an hour and are substituted with a headache point to brain dysfunction [19].

At least one symptom of aura appears gradually over two or more symptoms appear in more than four minutes succession. No aura symptom persists for more than 60 minutes. A headache comes after an aura, with a free period of less than sixty minutes (it could start earlier or with the aura). The majority of migraineurs who have auras also have migraine without an aura's overall duration is typically, less than an hour. If the aura persists for longer than one day but less than a week, then migraine with extended aura (also known as complicated Migraine) [20].

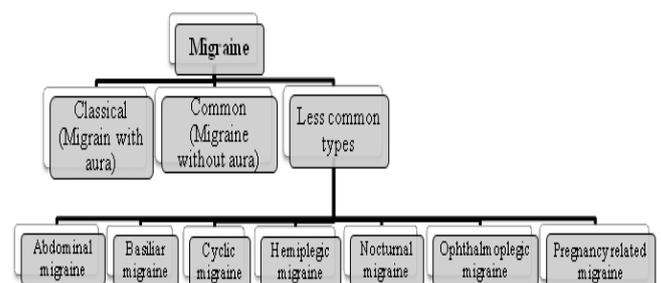


Figure 2: Types of Migraine [21]

Common Migraine

Commonly, migraine headaches start without any prior notice. Children exhibited this most. At least two of the following are present in headaches:

Qualities:

The location is unilateral.

Pulsating quality.

Mild to severe severity prevents or Bans (day-to-day activities)

Aggravation using stairs or comparable to Regular exercise.

Uncommon types of migraine (less common):

1. Abdominal Migraine:

Another name for periodic syndrome.

Pain in the abdomen that lasts for one to seventy-two hours along with flushing, pallor, nausea, or vomiting.

2. Migraine Basiliar: Pain arises from brain stem. Symptoms such as lightheadedness, double vision. This causes tingling on both sides of the body.

3. Cyclic Migraine

Prolonged attacks (10 or more per month).

Careful monitoring of thyroid and blood sugar levels is required.

4. Migraine Hemiplegia

Temporary headaches caused by severe migraines

Paralysis of the motor system.

Disturbances in one side of the senses followed by headache.

5. Migraines That Occur At Night:

Attacks in the early hours of the day or Patients are often awakened in the middle of the night from slumber.

6. Migraine Ophthalmoplegia

Usually, the pain is around the eyeball and lasts anywhere between a few days and a few months.

It results from the weakness of the muscles encircling the eye.

7. Migraines associated with pregnancy

Attacks of migraines starting in the third month of pregnancy to delivery due to the Stability of hormonal changes in the body. In this case, nonmedical treatment worked well [22].

Essential Oil Aromatherapy And Its Effect On Migraine

Aromatherapy with essential oils has been demonstrated to either fully eradicate migraines or lessen their discomfort and related symptoms. According to a meta-analysis study by Yuan et al., [10].

Elements of particular essential oils and the theories behind them were examined for anti-migraine properties. Ten essential oils from plants were examined for their impact on reducing the severity of migraines and lowering the attack's frequency. Among the ten, lavender essential oil, essential oils of peppermint, chamomile, and anise, mixed essential oils, rose essential oil, basil essential oil, and oil were linked to lessening migraine severity and decreasing the frequency of attacks.

Other oils were also found to be beneficial for migraines accompanied by phonophobia (sensitivity to sound), photophobia (sensitivity to noises), gastrointestinal distress, nausea, and other symptoms [23].

peppermint essential oil helped migraine sufferers with all their symptoms within five minutes of breathing [24].

The forehead and temporal regions were topically treated with chamomile essential oil. Using a gel and alleviated the pain, nausea, and vomiting and also photophobia and phonophobia symptoms in migraine patient [25].

Topically, anise essential oil was applied to the forehead and temporal regions. Decreased weekly migraine attack frequency by almost half of the month throughout the study's duration. 26 When basil essential oil is applied topically to the frontal and temporal lobes, as demonstrated to lessen the frequency and severity of migraine attacks [27].

Rose essential oil when applied topically to the temporal and forehead relieved the pain intensity of patients with heat migraine Syndrome which includes red eyes, photophobia, spicy taste, and facial heat during headaches. 28

Mixed essential oils with a lavender essential oil, grape seed essential oil, and base oil when applied to the face, forehead, and back of the neck completely eliminated migraine symptoms within 20 days of continual use and showed no reoccurrence within one year. Some patients reported significantly reduced pain levels compared to before the intervention.

Conclusion

A persistent and incapacitating neurological disorder, migraine is brought on by aberrant brain activity and neurovascular alterations. It develops in four stages, each exhibiting distinct symptoms: premonitory, aura, headache, and postdrome. Stress, hormones, lifestyle, sleep patterns, and genetics all have an impact on its occurrence. Even though drugs work well for both prevention and short-term relief, natural therapies like aromatherapy have a lot more advantages. It has been demonstrated that essential oils like lavender, peppermint, chamomile, anise, and basil can lessen symptoms of pain, nausea, and sensitivity. When used topically or inhaled, they can lessen the frequency and severity of migraines. Therefore, better long-term migraine control and enhanced patient well-being can result from combining contemporary treatment with holistic strategies like essential oil therapy, consistent sleep, stress reduction, and a healthy lifestyle.

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Conflicts of Interest

The authors declare no conflicts of interest.

Author Contribution

Both contribute equally

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Not Applicable

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