Lilli Clemens-Stäheli ND

EXTERNAL & INTERNAL TRIGGERS

Environmental & Physiological Factors

Introduction:

In KICK YOUR MIGRAINE you have learned how to identify triggers and their characteristics. You have also learned that migraines can be triggered by a wide range of factors, both external and internal triggers and can vary greatly from one individual to another.

EXTERNAL TRIGGERS involve the exposure to your surrounding environment and lifestyle factors, such as, physical activity, and exposure to certain stimuli. While diet is also a part of lifestyle, the extensive range of foods that can trigger symptoms merits its own separate list.

In comparison, INTERNAL TRIGGERS pertain to physiological processes within the body, such as hormonal fluctuations, dehydration, and sleep disturbances.

The following section provides a list of external and internal triggers, along with references to where you can find more detailed information in the book. Use this list as a practical guide to help you recognize potential factors that may contribute to your migraines.

External Triggers (Environment)

Poor posture

Poor workstation ergonomics or standing or sitting in the same position for prolonged periods leads to muscle fatigue and spasms. You can find more information on this topic in chapter 4 (sections 2.1 and 2.4).

Strenuous physical activity and physical exertion

Strenuous physical activity and physical exertion—especially when performed in hot climates—can act as migraine triggers due to external factors such as overheating, dehydration, and electrolyte imbalances. While the exertion itself involves internal effort, the surrounding environmental conditions (e.g., high temperatures, humidity, high altitude) play a significant role in triggering migraines, which is why this is categorized under external environmental triggers. You can find more information on this topic in chapter 2 (section 2.4) and chapter 4 (section 4.3).

Lighting

Exposure to bright, dim, or flickering light from artificial or fluorescent lights and computer screens. This affects the mood leading to irritation or short temper and symptoms such as sore eyes, fatigue, a foggy mind, or tension headaches.

Air quality, pollutants and Odours

Poor air quality - whether due to outdoor pollution (e.g., smog, vehicle exhaust, pollen) or indoor contaminants (e.g., mold, dust, or volatile organic compounds) - can trigger migraines in sensitive individuals. Indoor air pollutants may also include strong odours from perfumes, cleaning chemicals, air fresheners, paint, or synthetic materials. These substances can irritate the respiratory system, contribute to overall sensory overload, and act as potent migraine triggers. These distinctive odours are mostly regarded as unpleasant - are highly personal may

even be quite bothersome to some individuals and instantly recognized as potential triggers.

Noise and sound sensitivity

Sudden loud noises, ongoing background noise, or high-pitched sounds can be overstimulating and serve as triggers. Crowded environments, construction zones, or high-volume music venues may provoke sensory overload in some individuals.

Weather and atmospheric changes

Changes in weather - such as shifts in barometric pressure, windy weather, or storm fronts - may trigger migraines in sensitive individuals. These conditions can influence the balance of positive and negative ions in the atmosphere, which may affect mood, energy levels, and can act as an early warning (premonition) sign of a migraine.

Internal Triggers (Physiological)

Emotional and psychological

Emotions such as perceived stress, anxiety, sadness, anger, and even excitement can act as powerful internal triggers for migraines. Mental stress initiates a biological response in the body known as the fight-or-flight reaction, which involves a cascade of hormonal and neurological changes. This includes the release of stress hormones and shifts in neurotransmitter levels, both of which can contribute to migraine onset in sensitive individuals. Understanding how emotional states influence migraine activity is key to effective management. For a deeper exploration of the connection between emotional stress and migraine, refer to Chapter 4, Section 4.2.

Teeth grinding or clenching

Typically occurs during the night and can serve as an early warning sign (premonition phase). This stress-induced activity directly impacts the trigeminal nerve and activates the trigeminovascular system.

Fasting or skipping meals

Fasting or skipping meals can be risky for people with blood sugar regulation problems, as it may lead to hypoglycemia, electrolyte imbalances, and trigger a stress response. For more information on blood sugar regulation go to chapter 3, titled “Hypoglycemia” (section 3.9)

Adrenaline rush

This signifies a significant neurotransmitter shift associated with the fight-or-flight response. One notable thing is that you become acutely aware of your heart pounding towards the end of the adrenalin rush. Some examples that can influence an adrenaline rush include bungy jumping, sudden falls, or stumbles, experiencing orgasm, witnessing an accident, or engaging in confrontations marked by heightened aggression.

Dehydration

Dehydration occurs when the body loses more fluids than it takes in, leading to an insufficient amount of water to carry out normal bodily functions. It can result from excessive sweating, vomiting, diarrhoea, or insufficient fluid intake. Symptoms include thirst, dry mouth, dizziness, and fatigue. However, what tends to be more common is subclinical dehydration. This is mild, often unnoticed where fluid loss is not severe enough to cause obvious symptoms but can still affect the body's normal functioning. It may lead to fatigue, reduced cognitive performance, or decreased physical endurance, and over time, can increase the

risk of more serious dehydration or health issues. It often occurs due to inadequate daily water. Optimal fluid levels are essential for the movement of electrolytes, which is critical for proper cellular function.

Electrolyte imbalances

Electrolytes are essential minerals (ions) in the body that help conduct electrical impulses necessary for various physiological processes, including fluid balance, nerve function, and muscle contraction. These processes are particularly relevant to migraine susceptibility. Electrolyte imbalances, especially involving sodium chloride (salt) and magnesium, can result from factors such as dehydration, fasting, diarrhoea, and nutrient deficiencies.

Hormonal changes

Hormonal fluctuations or changes such as those that occur during menstruation, menopause, and hormone therapy, and surgery. For more information go to chapter 3 (section 3.8).

Sleep disturbances

Lack of sleep and changes in sleep patterns can affect neurotransmitter balance. Contributing factors include stress, which can lead to poor sleep or insomnia (see Sections 4.2 and 4.5), as well as sleep-disordered breathing (Sections 4.7 and 4.8).

Subclinical hypoxia

Subclinical hypoxia refers to subtle oxygen deprivation in brain tissue, often caused by shallow breathing or sleep-disordered breathing. For more information, see Chapter 4, Sections 4.7, 4.8, and 4.9.