

FROM TRIGGERS TO PATTERNS: THE ROLE OF NUTRITION IN MIGRAINE SUSCEPTIBILITY — A NARRATIVE REVIEW

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Background. Migraine attacks typically emerge in predisposed individuals following exposure to heterogeneous stimuli that vary widely across patients. A system-level perspective frames migraine as a disturbance of homeostasis and allostasis: the brain integrates multiple inputs and generates adaptive responses to maintain physiological stability, but sustained physiological or paraphysiological stressors may impose excessive allostatic load, ultimately culminating in an "allostatic reset" clinically manifesting as a migraine attack. Within this framework, dietary triggers are better conceptualized as threshold modulators rather than deterministic causes. Nutrition figures among the most frequently implicated domains, encompassing fasting, dehydration, specific foods and additives, and overall dietary patterns.

Methods. This narrative review synthesizes current evidence on dietary exposures as potential precipitants and modulators of migraine course, through a systematic search of the MEDLINE database up to July 2025.

Results. The most frequently reported food-related triggers include fasting, dehydration, alcohol, coffee, caffeine withdrawal, chocolate, milk and dairy products, processed and cured meats rich in nitrates and nitrites, citrus fruits, tea, onions, tomatoes, ice cream, nuts, spicy foods, and ultra-processed foods. Additives such as monosodium glutamate, aspartame, sulfites, and other artificial sweeteners have been repeatedly implicated, alongside dietary histamine and biogenic amines. Importantly, a discrepancy emerges between self-reported triggers and results from blinded provocation studies, underscoring the roles of recall bias, expectancy effects, and prodromal symptoms — particularly food cravings — misattributed to causation. Several studies further suggest that overall dietary patterns characterized by high glycemic load, irregular meal timing, excessive sugar and saturated fat intake, or ultra-processed food consumption may exert a greater influence on migraine susceptibility than individual food items. Inter- and intra-individual variability — shaped by genetic background, metabolic state, gut microbiome composition, and comorbidities — contributes additional complexity to the phenomenon.

Conclusions. Available evidence remains fragmented and frequently contradictory. Broad dietary exclusion strategies are inappropriate and risk reinforcing patients' cognitive biases, with potential negative consequences on quality of life and dietary diversity. Current evidence instead supports a personalized approach to trigger identification, prioritizing protective dietary patterns, adequate hydration, and consistent meal timing. Future research integrating omics technologies, digital tracking, and personalized nutrition strategies holds promise for developing individualized preventive interventions.