

Impact of Modern Food Culture on Health: A Critical Review through the Concept of Viruddha Ahara

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ABSTRACT

Background

Rapid urbanization and modernization have significantly altered dietary habits and lifestyle practices worldwide. Dependence on fast foods, processed foods, carbonated beverages, refrigerated meals, and irregular eating patterns has become increasingly common. Ayurveda describes such incompatible dietary practices under the concept of *Viruddha Ahara* (incompatible diet). Continuous consumption of incompatible foods adversely affects digestion and metabolism, leading to Dosha imbalance, Ama formation, and disease manifestation.

Modern scientific studies indicate that processed and ultra-processed foods contribute to oxidative stress, chronic inflammation, gut microbiome imbalance, insulin resistance, and metabolic dysfunction. These cumulative toxic effects closely resemble the Ayurvedic concept of *Dooshivisha*.

Aim

To critically evaluate the impact of modern food culture on health with special reference to the Ayurvedic concept of Viruddha Ahara.

Objectives

1. To review the classical concept of Viruddha Ahara in Ayurveda.
2. To study modern unhealthy food practices and their health hazards.
3. To correlate incompatible dietary habits with lifestyle disorders.
4. To explain mechanistic similarities between Ayurvedic concepts and modern biomedical pathways.
5. To evaluate the preventive role of Ayurvedic dietary principles in modern healthcare.

Conclusion

Modern food culture has substantially increased the prevalence of incompatible dietary practices. Continuous intake of Viruddha Ahara contributes to metabolic disturbances, oxidative stress, chronic inflammation, and

disease progression. Ayurvedic dietary principles provide a preventive and holistic approach for maintaining health and reducing lifestyle disorders.

Keywords: Viruddha Ahara, Ayurveda, Lifestyle Disorders, Junk Food, Ultra-Processed Food, Oxidative Stress, Chronic Inflammation, Dooshivisha

INTRODUCTION

Food is considered one of the fundamental pillars responsible for sustaining life and maintaining health. Ayurveda emphasizes that proper dietary habits are essential for physical, mental, and spiritual well-being. Ancient Ayurvedic scholars described detailed principles regarding food selection, combinations, processing methods, quantity, and timing to preserve health and prevent disease.

In recent decades, globalization, industrialization, urbanization, and changing lifestyles have drastically altered traditional food habits. Increased dependence on fast foods, processed foods, preserved meals, reheated foods, packaged snacks, sugary beverages, and irregular eating patterns has become common in modern society. Although these foods are convenient and appealing, excessive intake negatively affects digestive and metabolic functions.

Ayurveda explains harmful dietary combinations and improper eating habits under the concept of *Viruddha Ahara*. Acharya Charaka defined Viruddha Ahara as food that acts adversely on body tissues due to incompatibility in quality, potency, processing, quantity, or timing of intake.

Regular consumption of incompatible foods disturbs Doshas, weakens digestive fire (*Agni*), forms Ama, obstructs body channels (*Srotodushti*), and initiates disease processes.

The prevalence of obesity, diabetes mellitus, cardiovascular diseases, infertility, gastrointestinal disorders, skin diseases, and malignancies has increased remarkably in modern society. Contemporary biomedical evidence also suggests that processed foods rich in unhealthy fats, preservatives, additives, and refined sugars promote oxidative stress, inflammatory changes, and metabolic dysfunction.

These pathological changes resemble the Ayurvedic concept of *Dooshivisha*, where low-grade toxins gradually accumulate within the body and manifest disease over time. Therefore, the concept of Viruddha Ahara remains highly relevant in understanding present-day dietary hazards and lifestyle disorders.

REVIEW METHODOLOGY

This review was conducted using a structured literature review methodology to improve scientific credibility and interdisciplinary correlation between Ayurvedic concepts and modern biomedical evidence.

Databases Searched

Relevant literature was collected from:

- PubMed
- Scopus
- Google Scholar
- ResearchGate
- AYUSH Research Portal
- Classical Ayurvedic texts including Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya

Search Keywords

The following keywords were used during literature search:

- Viruddha Ahara
- Incompatible diet
- Processed foods
- Ultra-processed foods
- Junk food
- Oxidative stress
- Chronic inflammation
- Gut microbiome
- Lifestyle disorders
- Dooshivisha
- Ayurveda and nutrition

Inclusion Criteria

- Peer-reviewed articles published between 2015–2026
- Review articles and observational studies
- Experimental studies related to processed foods and metabolic disorders
- Classical Ayurvedic references discussing incompatible diet
- Articles discussing inflammation, oxidative stress, gut microbiome, and metabolic dysfunction

Exclusion Criteria

- Non-peer-reviewed sources
- Duplicate articles
- Incomplete studies
- Irrelevant nutritional studies unrelated to dietary incompatibility

Literature Selection Process

Studies were screened based on title, abstract, scientific relevance, and correlation with Ayurvedic principles. Selected articles were critically analyzed to establish links between Viruddha Ahara and modern biomedical mechanisms.

The literature search was conducted between January 2026 and March 2026 using PubMed, Scopus, Google Scholar, ResearchGate, and the AYUSH Research Portal. Boolean operators (AND, OR) were used to combine keywords and improve retrieval of relevant studies. Articles were screened based on title, abstract, full-text

availability, and relevance to the objectives of the review. Priority was given to peer-reviewed publications evaluating dietary incompatibility, ultra-processed foods, oxidative stress, chronic inflammation, gut microbiome alterations, and lifestyle disorders.

Concept Of Viruddha Ahara

The term *Viruddha Ahara* refers to food substances or dietary practices that are incompatible with the body and interfere with normal physiological functioning.

According to Ayurveda, incompatibility may occur due to:

- Opposite qualities of food substances
- Improper food combinations
- Faulty processing methods
- Incorrect quantity of food
- Unsuitable timing of intake
- Improper dietary habits

Continuous intake of incompatible food may result in:

- Dosha aggravation
- Weakening of digestive fire (*Mandagni*)
- Formation of Ama
- Obstruction of body channels (*Srotodushti*)
- Tissue damage and disease manifestation

Acharya Charaka described eighteen types of Viruddha Ahara and emphasized its role in disease causation.

Types Of Viruddha Ahara

1. Rasa Viruddha

Incompatibility due to contradictory tastes.

Example: Milkshake with sour fruits.

2. Virya Viruddha

Combination of substances having opposite potency.

Example: Fish with milk.

3. Samyoga Viruddha

Harmful food combinations.

Example: Honey and ghee in equal quantity.

4. Sanskara Viruddha

Improper processing or preparation of food.

Example: Heated honey.

5. Kala Viruddha

Consumption of unsuitable foods according to season or time.

Example: Cold foods during winter.

6. Matra Viruddha

Improper quantity of food intake.

Example: Excessive junk food consumption.

7. Vidhi Viruddha

Improper dietary habits and eating practices.

Example: Cold beverages immediately after spicy meals.

Modern Food Culture And Viruddha Ahara

Modern food culture is characterized by:

- Increased fast food consumption
- Processed and packaged foods
- Refrigerated and reheated meals
- Carbonated beverages
- Excessive intake of oily and sugary foods
- Irregular meal timings
- Use of preservatives and artificial additives

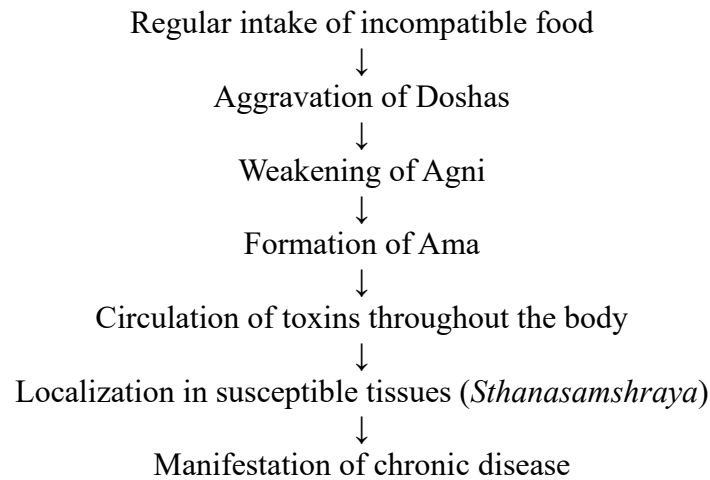
Many of these practices can be correlated with the Ayurvedic concept of Viruddha Ahara.

Common Examples of Viruddha Ahara in Modern Lifestyle

Modern Food Habit	Ayurvedic Correlation
Milkshake with citrus fruits	Rasa Viruddha
Fish with dairy products	Virya Viruddha
Reheated oils and fried foods	Sanskara Viruddha
Cold beverages after meals	Vidhi Viruddha
Excessive junk food consumption	Matra Viruddha
Irregular meal timings	Kala Viruddha

Pathogenesis Of Disease Due To Viruddha Ahara

The probable mechanism of disease formation due to incompatible food can be explained as follows:



This mechanism closely resembles cumulative toxicity described under *Dooshivisha*.

Mechanistic Correlation Between Ayurveda And Modern Science

Modern biomedical evidence supports several pathological mechanisms that resemble the Ayurvedic understanding of Viruddha Ahara and Dooshivisha.

1. Oxidative Stress

Processed foods rich in trans fats, refined sugars, and additives generate reactive oxygen species (ROS), resulting in oxidative cellular injury and inflammation. This may be correlated with Ama formation and tissue toxicity.

2. Chronic Inflammation

Frequent consumption of unhealthy foods activates inflammatory cytokines such as TNF-alpha, IL-6, and CRP, contributing to obesity, diabetes mellitus, cardiovascular disease, and metabolic syndrome.

3. Gut Microbiome Alteration

Ultra-processed foods negatively affect gut microbiota diversity and intestinal permeability, leading to dysbiosis and impaired metabolism. This may be conceptually linked with Agnimandya and Srotodushti.

4. Insulin Resistance and Metabolic Dysfunction

Excessive intake of refined carbohydrates and sugary beverages contributes to obesity, insulin resistance, fatty liver disease, and systemic inflammation.

5. Carcinogenic Potential

Reheated oils, deep-fried foods, and processed meat products may produce acrylamide and advanced glycation end products (AGEs), which promote oxidative damage and carcinogenesis.

6. Gut-Brain Axis and Neuroinflammation

Emerging evidence suggests that ultra-processed foods may alter gut microbiota composition and increase intestinal permeability, leading to systemic inflammation and neuroinflammatory responses. Such alterations have been associated with cognitive decline, mood disorders, and impaired neurological function. This

phenomenon may be conceptually correlated with the Ayurvedic understanding of Ama accumulation affecting *Manovaha Srotas* and overall health.

Health Hazards Of Modern Food Habits

1. Digestive Disorders

Frequent consumption of processed and junk foods impairs digestion and leads to acidity, constipation, bloating, and indigestion.

2. Obesity and Diabetes Mellitus

Foods rich in fats and refined carbohydrates contribute to obesity, insulin resistance, and type 2 diabetes mellitus.

3. Cardiovascular Disorders

Processed foods containing trans fats and excessive sodium increase the risk of hypertension and cardiovascular diseases.

4. Liver Disorders

Continuous intake of fatty foods may result in fatty liver disease and altered liver function.

5. Neurological Disorders

Oxidative stress and nutritional deficiencies may negatively affect cognitive and neurological functions.

6. Renal Damage

Artificial preservatives and toxic additives may adversely affect renal health.

7. Skin Disorders

Viruddha Ahara has been considered an important causative factor for various skin disorders including Kushtha and Shitapitta.

8. Carcinogenic Effects

Highly processed and deep-fried foods may contain carcinogenic compounds such as acrylamide and harmful additives.

9. Reproductive Disorders

Oxidative stress induced by unhealthy dietary habits may impair fertility and reproductive health.

Viruddha Ahara And Dooshivisha

Ayurveda describes Dooshivisha as a latent toxin that remains accumulated in the body and manifests disease gradually under favorable conditions.

Similarly, unhealthy modern dietary practices produce:

- Chronic toxicity
- Oxidative stress

- Chronic inflammation
- Metabolic dysfunction
- Progressive tissue damage

Symptoms such as fatigue, indigestion, infertility, skin disorders, and metabolic disturbances resemble the manifestations of Dooshivisha.

Thus, the harmful cumulative effects of modern food habits can be conceptually correlated with Dooshivisha.

Table: Classical References And Modern Interpretation

Ayurvedic Concept	Classical Reference	Modern Scientific Interpretation
Viruddha Ahara	Charaka Samhita Sutrasthana 26	Incompatible dietary practices causing metabolic dysfunction
Ama Formation	Impaired digestion	Accumulation of inflammatory metabolites and toxins
Dooshivisha	Latent cumulative toxicity	Chronic low-grade inflammation and oxidative stress
Agnimandya	Weak digestive fire	Reduced metabolic efficiency and gut dysfunction
Srotodushti	Obstruction of body channels	Microvascular dysfunction and impaired cellular transport

Table: Viruddha Ahara and Modern Health Consequences

Viruddha Ahara Practice	Ayurvedic Effect	Modern Health Outcome
Fish with milk	Dosha aggravation	Digestive intolerance and metabolic stress
Excess junk food	Mandagni	Obesity and insulin resistance
Heated honey	Ama formation	Formation of harmful oxidation products
Reheated oils	Dooshivisha	Oxidative stress and inflammation
Irregular meal timing	Agni disturbance	Metabolic syndrome and circadian disruption

DISCUSSION

The increasing popularity of fast foods and ultra-processed foods has significantly affected public health worldwide. Modern dietary habits are characterized by excessive intake of refined sugars, preservatives, unhealthy fats, additives, and incompatible food combinations that contribute to chronic disease development.

Viruddha Ahara may produce disease through both Apatarpanajanya (nutritional deficiency) and Santarpanajanya (overnutrition and metabolic overload) mechanisms.

Contemporary scientific evidence demonstrates associations between ultra-processed food consumption and obesity, diabetes mellitus, cardiovascular disease, chronic inflammation, gut dysbiosis, and increased cancer risk.

Research also indicates that unhealthy food habits alter gut microbiome composition and promote oxidative stress.

Although substantial evidence supports the harmful effects of ultra-processed foods and unhealthy dietary habits, direct scientific validation of specific classical Viruddha Ahara combinations remains limited. Disease manifestation depends upon Agni, Prakriti, genetic predisposition, physical activity, environmental influences, and overall dietary patterns. Most available studies are observational and do not establish causality. Therefore, further clinical and interdisciplinary research is required to strengthen scientific validation of Viruddha Ahara.

Although many studies support the harmful effects of processed foods, certain limitations remain. Most available evidence is observational in nature, and direct clinical studies specifically evaluating Viruddha Ahara are limited.

Some modern studies suggest that individual tolerance, genetic variability, physical activity, and overall dietary patterns may influence disease manifestation despite exposure to unhealthy foods.

Additionally, Ayurvedic concepts such as Agni, Ama, and Dosha imbalance are difficult to quantify objectively using current biomedical parameters, creating challenges in standardization and scientific validation.

Ayurveda offers a preventive and holistic approach through:

- Proper dietary combinations
- Freshly prepared food
- Seasonal dietary regimens
- Maintenance of digestive fire
- Detoxification therapies (*Shodhana*)

These principles may help reduce lifestyle disorders and improve overall health.

Further interdisciplinary clinical and experimental studies are required to establish stronger mechanistic evidence correlating Viruddha Ahara with inflammation, oxidative stress, gut microbiome alterations, and metabolic disorders.

Future research should focus on clinical trials evaluating commonly described Viruddha Ahara combinations. Integration of metabolomics, inflammatory biomarkers, gut microbiome analysis, and Ayurvedic assessment parameters may provide stronger evidence regarding the biological basis of Viruddha Ahara and its role in lifestyle disorders. Such interdisciplinary approaches may strengthen the scientific validation of Ayurvedic dietary principles in preventive healthcare.

CONCLUSION

Modern food culture has significantly altered traditional dietary habits and contributed to the increasing prevalence of lifestyle disorders. The Ayurvedic concept of Viruddha Ahara provides a scientific and holistic understanding of the harmful effects of incompatible dietary practices.

Continuous consumption of incompatible foods leads to Dosha imbalance, impaired digestion, oxidative stress, cumulative toxicity, chronic inflammation, and disease development.

Adoption of Ayurvedic dietary principles and awareness regarding healthy food practices may play an important role in disease prevention and health promotion.

Future interdisciplinary research integrating Ayurveda and biomedical sciences may further strengthen scientific validation of Viruddha Ahara and its role in modern healthcare.

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