

Review Article

Role of physiological evacuation in health preservation: a narrative review

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ABSTRACT

Physiological evacuation (Istifrāgh-e-tabī) is an essential physiological process described in Unani medicine through which the body naturally eliminates Fuḍlāt (metabolic waste products) generated during digestion and metabolism. Proper physiological evacuation is considered crucial for maintaining humoral equilibrium, preserving Ḥarārat Gharīzī (innate heat), and preventing disease. This narrative review examined Unani literature alongside contemporary biomedical evidence retrieved from PubMed, Scopus, ScienceDirect, Web of Science, Google Scholar, and the AYUSH Research Portal. The literature was critically analyzed to explore the formation of Fuḍlāt, the concept of Huḍūm Arba‘a, and the physiological pathways of waste elimination, including gastrointestinal, renal, respiratory, cutaneous, and secretory routes. Classical Unani descriptions of Barāz (feces), Bawl (urine), Ḥayḍ (menstruation), ‘Araq (sweat), Laban (breast milk), Tanaffus (respiration), Lu‘āb (saliva), and Ānsū (tears) were found to correspond conceptually with modern physiological mechanisms responsible for removing carbon dioxide, urea, uric acid, creatinine, bile pigments, excess electrolytes, and inflammatory metabolites. Effective physiological evacuation supports metabolic homeostasis, immune regulation, acid–base balance, thermoregulation, and tissue health, whereas impaired clearance contributes to oxidative stress, inflammation, and metabolic dysfunction. The review demonstrates a strong conceptual similarity between Unani principles and modern biomedical understanding of physiological waste elimination, highlighting the potential relevance of Istifrāgh-e-Ṭabī in preventive and integrative healthcare.

Keywords: Istifrāgh-e-tabī, Unani medicine, Metabolic waste, Health preservation, Integrative medicine

INTRODUCTION

Normally, health is maintained through coordinated processes of digestion, metabolism, and elimination of waste materials generated during physiological activity. Disturbance in these processes may result in the accumulation of excess or unwanted substances, which can impair nutrient utilization and disrupt physiological homeostasis. Under such conditions, even wholesome and nutritious food may not produce beneficial effects and may adversely affect health.¹ Waste materials of the body, termed Fuḍlāt in Unani medical terminology, are generated continuously during cellular activity and may

exceed the physiological requirements of the body.² If these materials are not effectively eliminated, they may disturb normal physiological activity and contribute to disease development.

Unani literature broadly describes Fuḍlāt in different forms, including Barāz (feces), Bawl (urine), Ḥayḍ (menstrual blood), ‘Araq (sweat), Laban (breast milk), Tanaffus (respiration), Lu‘āb (saliva), and Ānsū (tears).³ These waste materials may exist as solid, liquid, or gaseous substances.⁴ Contemporary medicine similarly explains that metabolic processes continuously produce waste substances such as carbon dioxide, urea, uric acid,

creatinine, ammonia, bile pigments, excess salts, water, and other toxic metabolites that must be removed to maintain biochemical stability and prevent cellular damage.⁵

Scientific evidence indicates that accumulation of metabolic waste may disturb cellular function, increase oxidative stress, alter acid–base balance, and impair organ function. Therefore, the body continuously removes these materials through physiological pathways, including the lungs, kidneys, intestines, and skin. Efficient elimination of metabolic waste supports normal physiological activity, maintains biochemical equilibrium, and protects tissues from toxicity.^{6,7} Regular removal of waste materials is therefore essential for the preservation of health.⁸

According to Unani medicine, retention of Fuḍlāt leads to the accumulation of unwanted material within tissues and vessels, causing obstruction that disturbs circulation and affects the quality of humours. Excess retention increases internal moisture beyond normal physiological limits and weakens Ḥarārat Gharīzī (innate heat), which is responsible for maintaining metabolic activity. As innate heat declines, abnormal changes occur in bodily fluids that may contribute to disease development.^{9–11} Continuous retention of waste materials also imposes an internal burden on the body and interferes with the proper supply of nutrients and oxygen to vital organs.¹²

Waste materials may originate from endogenous metabolic processes or from external factors such as diet and environment. Accumulation of such materials may promote inflammatory changes, damage tissues, and contribute to the development of systemic disorders.¹³

FOUR STAGES OF DIGESTION AND FORMATION OF FUḌLĀT

According to Unani medicine, digestion occurs in four sequential stages known as Huḍūm Arba‘a, through which food is progressively transformed into substances suitable for nourishment of tissues. During each stage, useful components are absorbed, while surplus material forms waste products that require elimination.

First digestion – gastric digestion (haḍm awwal)

The first stage of digestion occurs in the stomach and intestines, where the digestive faculty converts food into a semi-fluid nutritive substance known as Kaylūs (chyle). The useful portion is absorbed, while the residual material is eliminated as Barāz (feces).¹⁴

Second digestion – hepatic digestion (haḍm dom)

In the second stage, Kaylūs reaches the liver, where it transforms nutrients into humours. During this process, waste materials, including bile components and excess fluid, are separated and eliminated through the urine and intestinal pathways.¹⁴

Third digestion – vascular digestion (haḍm ‘urūqī)

The humours circulate through blood vessels and undergo further metabolic modification before reaching the tissues.

Fourth digestion – tissue digestion (haḍm ‘uḍwī)

At the tissue level, organs utilize nutrients according to their requirement. Surplus material produced during this stage is eliminated as sweat, vapours, and other excretory substances.¹⁴

CONCEPT OF PHYSIOLOGICAL EVACUATION (ISTIFRĀGH-E-ṬABĪ)

The term Istifrāgh originates from the Arabic root meaning “to empty” or “to clear out”.^{15,16} In Unani medicine, Istifrāgh-e-Ṭabī represents an essential physiological mechanism by which the body eliminates excess or harmful material produced during metabolic processes. Istifrāgh-e-Ṭabī includes natural physiological processes such as defecation, urination, sweating, menstruation, respiration, salivation, and tear secretion. When natural evacuation becomes insufficient, Unani physicians employ therapeutic methods such as Ishāl (purgation), Idrār-i-Bawl (diuresis), Qay’ (emesis), Ta’rīq (diaphoresis), Faṣḍ (venesection), and other evacuative measures to remove morbid matter.^{10,11} From a scientific perspective, Istifrāgh-e-Ṭabī corresponds to the coordinated activity of physiological elimination systems that remove metabolic waste products. Therefore, Istifrāgh-e-Ṭabī may be interpreted as a physiological mechanism that maintains internal balance by continuously removing excess or harmful substances.

PHYSIOLOGICAL ROUTES OF ELIMINATION

Feces (barāz)

Barāz represents the waste product of Haḍm Awwal (primary digestion).¹⁴ Proper evacuation of stool reflects normal digestive activity and helps remove bile pigments, microbial toxins, and inflammatory metabolites from the body. Scientific evidence indicates that regular bowel movement supports gut microbiota balance, intestinal motility, and immune regulation.^{17,18}

Urine (bawl)

Urine represents the elimination of excess fluid and soluble metabolic waste substances such as urea, uric acid, creatinine, and electrolytes.¹⁹ Proper urinary excretion maintains fluid balance, acid–base equilibrium, and biochemical stability, while impaired elimination may contribute to renal and metabolic disorders.^{20–22}

Menstruation (hayḍ)

Menstruation represents the elimination of excess blood and cellular material from the uterus and is considered an

important physiological indicator of reproductive health.^{23–25} Regular menstrual elimination reflects coordinated hormonal regulation and helps maintain reproductive health.

Sweat (araq)

Sweating eliminates water, electrolytes, and small quantities of metabolic waste through skin pores. This process contributes to thermoregulation, maintenance of fluid balance, and removal of metabolic by-products.^{26,27}

Breast milk (laban)

Lactation represents a physiological diversion of nutritive material through mammary glands and contributes to maternal metabolic regulation after childbirth. Scientific evidence indicates that breastfeeding supports hormonal balance, immune modulation, and long-term maternal health.^{28–30}

Respiration (tanaffus)

Respiration eliminates carbon dioxide produced during cellular metabolism and helps maintain acid–base balance necessary for cellular function and metabolic activity.^{31–34}

Saliva (lu‘āb)

Saliva supports digestion and oral protection by removing microorganisms, cellular debris, and harmful substances from the oral cavity while maintaining oral microbiological balance.^{35,36}

Tears (ānsū)

Tears protect ocular tissues by removing irritants and microorganisms, and help maintain ocular surface stability and immune defense.^{37–40} Together, these physiological routes demonstrate that elimination of metabolic waste is a coordinated and continuous process essential for the preservation of health.

METHODS

This narrative review was conducted to explore the concept of Fuḍlāt (metabolic waste products) and their elimination pathways in Unani medicine, and to examine their relevance in contemporary biomedical science. Classical Unani texts, including *Kitab al-Hawī*, *Kitab al-Mukhtarāt fī al-Tibb*, *Kulliyat-e-Asrī*, and other relevant sources, were reviewed alongside literature retrieved from PubMed, Scopus, ScienceDirect, Web of Science, Google Scholar, and the AYUSH Research Portal. The search focused on Fuḍlāt, Huḍūm Arba‘a (four stages of digestion), physiological excretion, detoxification, metabolic waste generation, homeostasis, and waste elimination mechanisms. Relevant information was extracted, critically analyzed, and thematically organized according to the major routes of waste elimination

described in both Unani and modern medicine, including gastrointestinal, renal, respiratory, and cutaneous pathways. Classical concepts were interpreted in light of contemporary biomedical knowledge while preserving the original Unani framework.

Reference management and bibliography generation were performed using Zotero. ChatGPT and Grammarly were used solely for language editing, readability enhancement, grammatical correction, and translation of selected Urdu-language passages into English. All translated content, interpretations, and conclusions were independently reviewed and verified by the authors. No artificial intelligence tool was used for literature retrieval, evidence appraisal, data analysis, or the development of scientific conclusions.

RESULTS

The reviewed literature identified Istifrāgh-e-Ṭabī as a fundamental physiological process for maintaining health through the elimination of Fuḍlāt (metabolic waste products). Unani texts describe eight major routes of waste elimination: Barāz (feces), Bawl (urine), Ḥayḍ (menstruation), ‘Araq (sweat), Laban (breast milk), Tanaffus (respiration), Lu‘āb (saliva), and Ānsū (tears). Contemporary biomedical literature similarly recognizes the removal of metabolic by-products such as carbon dioxide, urea, uric acid, creatinine, bile pigments, and excess electrolytes through respiratory, renal, gastrointestinal, cutaneous, and secretory pathways. Effective waste elimination was consistently associated with the maintenance of homeostasis, metabolic balance, immune function, and overall health, whereas impaired clearance was linked to metabolic dysfunction, oxidative stress, and inflammation. These findings demonstrate a strong conceptual overlap between the Unani concept of Istifrāgh-e-Ṭabī and modern physiological mechanisms of waste elimination.

DISCUSSION

The present review demonstrates a close conceptual similarity between the Unani concept of Istifrāgh-e-Ṭabī and the modern understanding of physiological waste elimination. Both systems recognize that the continuous removal of metabolic waste is essential for maintaining physiological balance and preventing disease. In Unani medicine, proper elimination of Fuḍlāt helps preserve humoral equilibrium and Ḥarārat Gharīzī. Retention of these waste products may disturb physiological balance and contribute to disease development, as described in classical Unani literature.^{10,11}

The findings of this review are consistent with previous Unani literature, which describes Istifrāgh as a fundamental process for maintaining health through the natural elimination of waste materials.^{8–10} Similarly, modern biomedical studies show that metabolic by-products such as carbon dioxide, urea, creatinine, and

inflammatory metabolites must be efficiently removed through the lungs, kidneys, intestines, skin, and other physiological pathways to maintain homeostasis.^{21,22} Impaired waste clearance has been associated with oxidative stress, inflammation, and metabolic dysfunction, which conceptually supports the Unani view of retention of Fuḍlāt.

The physiological routes of elimination described in Unani medicine—including defecation, urination, sweating, respiration, menstruation, lactation, salivation, and tear secretion—also correspond well with established physiological functions recognized in modern medicine.^{18,26} These observations suggest that although the terminology differs, both systems emphasize the importance of efficient physiological evacuation in preserving health. Our findings are consistent with those reported by Alam et al who described Istifrāgh as an important mechanism for maintaining health in Unani medicine.¹¹ Likewise, Mangia et al. reported that impaired removal of metabolic waste contributes to metabolic dysfunction, while Gounden et al emphasized the importance of renal excretory function in maintaining physiological homeostasis.^{7,21} These findings support the traditional Unani concept of Fuḍlāt elimination.

This review is limited by its narrative design and reliance on published literature. Further clinical and experimental studies integrating classical Unani concepts with modern biomedical markers are needed to better understand the role of Istifrāgh-e-Ṭabī in health preservation and disease prevention.

CONCLUSION

The present review highlights that Istifrāgh-e-Ṭabī represents an important principle for the preservation of health in both Unani and contemporary medicine. Unani scholars described that Fuḍlāt, the by-products of digestion and metabolism formed through Huḍūm Arba‘a, must be properly eliminated to maintain humoral equilibrium and preserve Ḥarārat Gharīzī. Retention of these waste materials disturbs the physiological balance and contributes to disease development.

Modern scientific evidence similarly shows that continuous elimination of metabolic waste products such as carbon dioxide, urea, uric acid, creatinine, bile pigments, excess electrolytes, and inflammatory mediators is essential for maintaining homeostasis, metabolic stability, immune regulation, and normal organ function. Physiological elimination pathways, including defecation, urination, sweating, respiration, menstruation, lactation, salivation, and tear secretion, help prevent the accumulation of harmful substances associated with oxidative stress, inflammation, metabolic disturbances, and chronic diseases.

The review demonstrates a strong conceptual similarity between classical Unani principles and the modern

understanding of metabolic waste clearance and physiological regulation. It also highlights that elimination processes are not only therapeutic mechanisms but fundamental requirements for the maintenance of health and disease prevention.

Integration of Unani concepts with contemporary biomedical evidence may support the development of evidence-based preventive and holistic healthcare strategies. Further interdisciplinary research is needed to scientifically explore the clinical relevance of traditional concepts related to waste elimination and their potential role in modern healthcare systems.

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