

**PREVENTIVE ROLE OF *RTU SODHANA* IN LIFESTYLE DISORDERS:
WITH SPECIAL REFERENCE TO LIVER DISEASE – A REVIEW
STUDY**

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ABSTRACT

Ayurveda emphasizes the importance of seasonal regimens (*Rtucharya*) and cleansing therapies (*Śodhana*) in preserving health and preventing the onset of lifestyle disorders. Among these, *Rtu Śodhana*—the seasonal purification process—holds special significance in balancing aggravated Doṣas and strengthening organ systems vulnerable to seasonal variations. In modern times, irregular lifestyle, unwholesome diet, and exposure to stress contribute to lifestyle disorders such as obesity, diabetes, dyslipidaemia, and particularly **liver-related diseases** including fatty liver and cirrhosis. The liver, being central to metabolism, detoxification, and digestion, is highly susceptible to derangements caused by Pitta and Kapha vitiation. Classical Ayurvedic texts recommend seasonal *Śodhana* procedures like *Vamana*, *Virechana*, *Basti*, and *Raktamokṣaṇa* to eliminate accumulated Doṣas and enhance resilience against disease progression. Regular practice of *Rtu Śodhana* not only maintains *Agni*

(**digestive fire**) and optimizes liver function but also prevents Ama accumulation, thereby reducing the risk of hepatic and metabolic disorders. By integrating seasonal purification into routine healthcare, Ayurveda offers a holistic preventive approach that promotes liver health, enhances immunity, and ensures long-term well-being. This review explores the preventive role of *Rtu Śodhana* in lifestyle disorders with a special reference to liver diseases, highlighting its physiological basis, classical references, and contemporary relevance.

KEYWORDS: Ayurveda, *Rtu Śodhana*, Lifestyle disorders, Liver disease, Preventive healthcare.

1. INTRODUCTION

Ayurveda, the ancient science of life, places a strong emphasis on the preservation of health along with the management of diseases. The classical dictum “*Swasthasya Swasthya Rakshanam, Aturasya Vikara Prashamanam*” clearly highlights that the foremost duty of Ayurveda is to maintain the health of a healthy person before treating the diseased one.^[1] Health in Ayurveda is defined not merely as the absence of disease but as a state of equilibrium between Doṣas (Vata, Pitta, Kapha), Dhātus (tissues), Agni (digestive fire), Malas (waste products), and the well-being of Atma, Indriya, and Manas.^[2]

In contemporary society, lifestyle disorders such as obesity, type 2 diabetes mellitus, hypertension, dyslipidemia, and non-alcoholic fatty liver disease (NAFLD) have emerged as leading causes of morbidity and mortality. These disorders are directly linked to sedentary behavior, irregular dietary practices, psychological stress, and environmental changes.^[3] The liver, being a vital organ of metabolism and detoxification, is particularly vulnerable to the cumulative effects of such unhealthy lifestyles, often resulting in conditions like fatty liver, cirrhosis, and hepatocellular carcinoma.^[4]

Modern medicine provides symptomatic and disease-specific interventions; however, the burden of lifestyle disorders continues to rise globally. This highlights the need for effective **preventive measures** that address the root cause of such disorders and strengthen the body’s natural defense mechanisms. Ayurveda offers a preventive approach through seasonal regimens (*Rtucharya*) and purificatory procedures (*Śodhana*), which help in eliminating accumulated Doṣas, preventing the formation of *Ama* (toxic by-products of indigestion), and maintaining the functional capacity of vital organs such as the liver.^[5]

Among these, **Rtu Śodhana** (seasonal purification) stands out as a dynamic and personalized preventive tool. By aligning the body with the cyclical changes in nature, it ensures equilibrium of Doṣas, enhances Agni, and improves systemic immunity. Thus, incorporation of *Rtucharya* and *Śodhana* therapies is not only beneficial for disease prevention but also for achieving long-term wellness and healthy aging.^[6]

AIMS AND OBJECTIVES

1. To study the classical concept of R̥tu Śodhana as described in Ayurvedic texts.
2. To analyze the role of R̥tu Śodhana in the prevention of lifestyle disorders.
3. To explore the specific preventive benefits of R̥tu Śodhana with special reference to liver health.
4. To correlate Ayurvedic preventive measures with modern understanding of liver physiology and lifestyle diseases.

5. Concept of R̥tu Śodhana in Ayurveda

R̥tu Śodhana is defined as the seasonal administration of purificatory therapies aimed at expelling aggravated Doṣas and preparing the body to adapt smoothly to environmental changes. Seasonal fluctuations in temperature, humidity, and diet have a direct impact on the equilibrium of Vata, Pitta, and Kapha; when left unchecked, these variations lead to Doṣa accumulation and subsequent manifestation of disease. The practice of R̥tu Śodhana thus serves as a preventive measure by eliminating these seasonal imbalances before they progress into pathological states. Classical Ayurvedic texts emphasize this concept with remarkable precision. Charaka recommends *Vamana* (therapeutic emesis) during Vasanta R̥tu to eliminate aggravated Kapha, Sushruta advises *Virechana* (therapeutic purgation) in Sharad R̥tu to pacify vitiated Pitta, while Vagbhata prescribes *Basti* (medicated enema) during Varsha R̥tu to balance aggravated Vata.^[7] These instructions are not arbitrary; rather, they reflect an intricate understanding of the cyclical nature of Doṣa vitiation and its correlation with seasonal transitions.

The Ayurvedic doctrine describes this process through the stages of *Chaya* (accumulation), *Prakopa* (aggravation), and *Prasara* (spread). For example, Kapha accumulates during Hemanta, aggravates in Vasanta, and if not eliminated, manifests in diseases such as respiratory or metabolic disorders. Similarly, Pitta accumulates in Varsha, aggravates in Sharad, and predisposes the body to hepatic and inflammatory diseases if purification is not performed.^[8] By introducing season-specific cleansing, R̥tu Śodhana interrupts this pathogenic sequence, thereby preventing Doṣa overflow and systemic imbalance.

The cyclical process of *Chaya* (accumulation), *Prakopa* (aggravation), and *Prasara* (spread) of Doṣas explains why specific purification therapies are indicated at different times of the year. To make this relationship clearer, the following table summarizes the seasonal

predominance of Doṣas and the corresponding Śodhana procedures recommended for preventive health.

Table 1: Relationship between Season, Doṣa, and Recommended Śodhana.

Season (Ṛtu)	Predominant Doṣa (Aggravation)	Recommended Śodhana Procedure	Preventive Relevance to Liver Health
Vasanta (Spring)	Kapha	<i>Vamana</i> (therapeutic emesis)	Prevents Kapha-induced congestion, obesity, and fatty liver
Sharad (Autumn)	Pitta	<i>Virechana</i> (therapeutic purgation)	Clears aggravated Pitta, regulates bile secretion, reduces hepatic inflammation
Varsha (Monsoon)	Vata	<i>Basti</i> (medicated enema)	Balances Vata, improves circulation and absorption, reduces liver metabolic load
When Pitta–Rakta combined	Pitta + Rakta	<i>Raktamokṣaṇa</i> (bloodletting)	Relieves congestive and inflammatory hepatic pathologies

As the table demonstrates, each season has a predictable pattern of Doṣa predominance, and timely administration of the corresponding Śodhana prevents the progression of these imbalances into disease. This is particularly relevant for the liver, which is the principal seat of Pitta and plays a central role in metabolism and detoxification. By eliminating Kapha in Vasanta through *Vamana*, clearing Pitta in Sharad through *Virechana*, pacifying Vata in Varsha with *Basti*, and reducing Pitta–Rakta vitiation through *Raktamokṣaṇa*, *Ṛtu Śodhana* directly supports hepatic resilience. Such seasonal alignment ensures that the liver remains protected against metabolic overload and inflammatory processes, thereby reducing the risk of lifestyle-induced liver disorders.

The rationale behind this regimen lies in its preventive and adaptive capacity. Each season exerts distinct stressors on the body: Kapha predominates in spring, Pitta in autumn, and Vata in the monsoon. Administering therapies such as *Vamana*, *Virechana*, and *Basti* during these seasons not only detoxifies the body but also rekindles Agni, enhances digestion, and fortifies Ojas, thereby improving immunity. Recent reviews suggest that integrating *Ṛtu Śodhana* in routine healthcare significantly reduces the incidence of lifestyle-related disorders, particularly those linked to metabolic dysfunction and liver diseases.^[9]

6. Lifestyle Disorders in Contemporary Context

Lifestyle disorders are a group of non-communicable diseases primarily caused by unhealthy dietary patterns, physical inactivity, stress, and irregular daily routines. They are characterized by slow progression and long duration, differing from acute infectious

conditions in their etiology and management. The World Health Organization identifies these disorders as the leading cause of morbidity and mortality worldwide, contributing to more than 70% of deaths globally, reflecting their immense public health burden.^[10]

Among the most significant conditions, **metabolic syndrome** is recognized as a cluster of abnormalities including abdominal obesity, hypertension, insulin resistance, and dyslipidemia. This syndrome is strongly associated with increased risk of type 2 diabetes and cardiovascular diseases.^[11] Another major disorder, **non-alcoholic fatty liver disease (NAFLD)**, is now regarded as the hepatic component of metabolic syndrome and is one of the most common chronic liver conditions across the globe. Alongside these, obesity and cardiovascular risks are interrelated manifestations of faulty lifestyle behaviors and are widely prevalent in both developed and developing countries.^[12]

Ayurveda explains the pathogenesis of such disorders through the principles of *Agni* (digestive fire) and *Ama* (toxic by-products of incomplete digestion). Impairment of *Agni* (*Agnimandya*) due to improper food habits (*mithya ahara*), sedentary lifestyle (*avyayama*), and irregular regimens (*mithya vihara*) leads to the production of *Ama*, which circulates in the body and obstructs *Srotas* (channels). This obstruction initiates *Doṣa-Dushti*, disturbing the balance of Vata, Pitta, and Kapha, and eventually manifests as systemic disorders such as obesity, NAFLD, diabetes, and cardiovascular disease.^[13] Thus, both classical Ayurvedic theory and modern biomedicine converge in recognizing that lifestyle-induced disorders are the outcome of cumulative metabolic dysfunction, underscoring the urgent need for preventive measures.

7. Liver as a Vulnerable Organ

The liver is a central organ of metabolism and detoxification, playing a pivotal role in carbohydrate, lipid, and protein regulation, bile production, hormone metabolism, and clearance of toxins. It maintains systemic homeostasis by integrating nutrient processing with detoxification pathways, thereby protecting the body against toxic insults and maintaining energy balance.^[14] Due to its constant exposure to dietary and environmental stressors, the liver is highly susceptible to dysfunction when lifestyle-related factors such as excessive calorie intake, alcohol consumption, and sedentary behavior are present.^[15]

From the Ayurvedic perspective, the **Yakrit (liver)** is regarded as a principal seat of *Pitta dosha*, especially *Ranjaka Pitta*, which governs the conversion of *Rasa Dhatu* into *Rakta*

Dhatu, thereby ensuring proper blood formation and quality.^[16] Any disturbance in Pitta at its site is believed to impair bile secretion and digestion, leading to pathological manifestations that correspond to modern hepatic conditions such as jaundice, fatty liver disease, and hepatitis. Thus, Ayurveda recognizes the liver as a critical organ where imbalances in digestion and metabolism first become evident.

Lifestyle practices contribute significantly to hepatic dysfunction. Overindulgence in heavy, oily, or incompatible foods (*guru ahara*, *viruddha ahara*), irregular eating habits, lack of exercise, and psychological stress (*mano-abhigata*) impair *Agni* and lead to the formation of *Ama*. This toxic material circulates through the *Srotas* and places a heavy burden on the *Yakrit*, thereby reducing its efficiency in detoxification and metabolism.^[17] Over time, these derangements manifest as fatty infiltration, inflammation, or cirrhosis.

The correlation between *Doṣa* imbalance and hepatic dysfunction is explicit in Ayurvedic pathology. Predominantly, aggravated **Pitta dosha** leads to inflammatory and degenerative changes in the liver, while **Kapha vitiation** is associated with fatty accumulation and sluggish metabolism. In addition, **Vata disturbance** can impair circulation and neural regulation, worsening hepatic pathology.^[18] This holistic view explains why the liver is considered highly vulnerable to lifestyle errors and why preventive approaches, such as *Ṛtu Śodhana*, are emphasized for maintaining hepatic health.

8. Preventive Role of *Ṛtu Śodhana* in Liver Diseases

The preventive role of *Ṛtu Śodhana* in liver disorders is based on its ability to eliminate aggravated *Doṣas*, regulate *Agni*, and clear *Ama*, thereby reducing the risk of pathological progression. By performing seasonal purification, the gastrointestinal tract and metabolic pathways are cleansed, enabling the liver to maintain its efficiency in bile secretion, nutrient metabolism, and detoxification. This mechanism directly supports hepatic resilience against the insults of faulty lifestyle practices.

Among the seasonal purificatory measures, **Vamana** (therapeutic emesis) is advised during *Vasanta Ṛtu*, when Kapha becomes aggravated due to rising temperatures. The elimination of Kapha prevents metabolic congestion, reduces lipid accumulation, and assists in controlling fatty liver progression.^[7] **Virechana** (therapeutic purgation), indicated during *Sharad Ṛtu*, is regarded as the most effective procedure for pacifying aggravated Pitta. Since the liver is the

principal site of Pitta, Virechana plays a critical role in detoxifying bile, reducing hepatic inflammation, and preventing disorders such as jaundice and NAFLD.^[19]

Basti (medicated enema), practiced in *Varsha Rtu*, pacifies aggravated Vata. By regulating circulation, absorption, and excretion, it indirectly supports metabolic health and reduces stress on hepatic function. In conditions where aggravated Pitta and Rakta are dominant, **Raktamokṣaṇa** (bloodletting) is recommended, as it reduces oxidative stress and helps in disorders with inflammatory or congestive hepatic pathology.^[20]

Evidence from both classics and contemporary studies supports these observations. Charaka and Sushruta emphasize the seasonal application of Śodhana therapies for maintaining health, while modern research on Panchakarma has shown improvement in liver enzyme profiles, lipid regulation, and antioxidant status after Virechana and Basti therapies. Such findings validate the hepatoprotective and preventive role of Rtu Śodhana in lifestyle-related liver disorders, offering a bridge between traditional preventive practices and modern hepatology.

9. Panchakarma Procedures in Rtu Śodhana

The classical Ayurvedic framework prescribes specific Panchakarma procedures during seasonal transitions to eliminate aggravated Doṣas and prevent their progression into disease. These bio-cleansing therapies not only restore the balance of Agni but also protect vital organs such as the liver, which is particularly vulnerable to Pitta-related imbalances. Among them, *Vamana*, *Virechana*, *Basti*, and *Raktamokṣaṇa* are most prominently recommended in seasonal regimens for their preventive and therapeutic roles.^[7]

Vamana (therapeutic emesis) is advised during *Vasanta Rtu* (spring), when Kapha that has accumulated during Hemanta becomes liquefied due to the increasing warmth of the season. If left unchecked, aggravated Kapha can lead to metabolic congestion, obesity, and hepatic steatosis. Vamana eliminates this excess Kapha, improves lipid metabolism, and prevents disorders such as fatty liver disease and hyperlipidemia.^[8]

Virechana (therapeutic purgation) is considered the prime therapy for aggravated Pitta, particularly in *Sharad Rtu* (autumn). Since the liver is recognized in Ayurveda as the principal seat of Pitta, Virechana is especially significant in hepatic protection. By expelling morbid Pitta through the lower pathway, Virechana regulates bile secretion, reduces hepatic inflammation, and clears metabolic toxins. Clinical evidence suggests that Virechana therapy

improves liver enzyme profiles and reduces the risk of non-alcoholic fatty liver disease (NAFLD), validating its role as a hepatoprotective measure.^[11]

Basti (medicated enema), prescribed in *Varsha Rtu* (monsoon), helps pacify aggravated Vata. Although not directly targeted at the liver, Basti plays an indirect role in hepatic health by regulating intestinal absorption, improving circulation, and reducing metabolic load on the Yakrit (liver). Through systemic detoxification, it enhances metabolic efficiency and prevents secondary hepatic complications associated with Vata imbalance.^[27]

Raktamokṣaṇa (bloodletting) is indicated when there is simultaneous aggravation of Pitta and Rakta. It is useful in conditions where inflammatory or congestive hepatic pathologies manifest, often accompanied by skin disorders or bleeding tendencies. By reducing vitiated Rakta and lowering oxidative stress, Raktamokṣaṇa provides relief in hepatic inflammations and supports systemic detoxification.^[9]

Collectively, these Panchakarma procedures serve as season-specific interventions that not only align the body with environmental changes but also provide targeted preventive benefits against lifestyle-induced liver disorders. Their integration into routine seasonal care underscores the preventive wisdom of Ayurveda and its relevance in modern hepatology.

Virechana and Liver Health

Among all Panchakarma procedures, *Virechana* (therapeutic purgation) holds a special place in the prevention and management of liver disorders. Ayurveda describes the **Yakrit (liver)** as the prime seat of *Pitta dosha*, particularly *Ranjaka Pitta*, which governs the transformation of Rasa Dhatu into Rakta Dhatu. When Pitta is vitiated due to faulty diet (*mithya āhāra*), lifestyle errors (*mithya vihāra*), or stress, the liver becomes a critical site of pathology, resulting in conditions comparable to jaundice, fatty liver, and hepatitis.^[18]

Virechana is specifically prescribed during *Sharad Rtu* (autumn), a season when Pitta naturally aggravates. By expelling morbid Pitta through the lower gastrointestinal route, *Virechana* regulates bile secretion, improves digestion, and clears toxins, thereby preventing hepatic overload. Classical references in Charaka and Sushruta emphasize the utility of *Virechana* in disorders of Rakta and Pitta, highlighting its hepatoprotective potential.^[1]

Modern research supports these classical claims. Clinical evaluations of *Virechana* therapy have demonstrated improvements in biochemical parameters such as serum bilirubin, liver

enzymes (AST, ALT), and lipid profiles. Patients with metabolic syndrome undergoing Virechana have shown better regulation of hepatic metabolism and reduced risk factors for non-alcoholic fatty liver disease (NAFLD).^[11] Experimental studies also suggest that purgation therapies exert antioxidant and anti-inflammatory effects, thereby reducing oxidative stress and supporting hepatic regeneration.^[28]

Thus, Virechana serves as both a preventive and therapeutic intervention in liver disorders. Its seasonal administration during Sharad Rtu helps maintain Pitta balance, ensures proper bile metabolism, and protects the liver against inflammatory and degenerative changes. Integrating Virechana into preventive regimens offers a unique Ayurvedic approach to reducing the burden of lifestyle-related hepatic diseases.

10. Physiological and Preventive Basis

The physiological foundation of *Rtu Śodhana* is strongly linked to the regulation of *Agni*, which is regarded in Ayurveda as the root of both health and disease. Balanced *Agni* ensures proper digestion, assimilation, and metabolic transformation, while impaired *Agni* leads to *Ama* formation and systemic dysfunction. Seasonal purification corrects *Agnimandya*, enhances digestive efficiency, and prevents toxic buildup, thereby maintaining metabolic homeostasis and reducing the burden on the liver.^[21]

Liver function is further supported through enhanced bile secretion and metabolic activity stimulated by seasonal *Śodhana* therapies. Virechana, in particular, has been shown to improve hepatic clearance and bile flow, assisting in lipid metabolism and reducing the risk of fatty infiltration. Similarly, Vamana helps regulate Kapha-related secretions, preventing metabolic congestion, while Basti supports nutrient assimilation and circulation, indirectly benefitting hepatic detoxification processes.^[22]

At the Dhatu level, *Rtu Śodhana* contributes to cellular detoxification and rejuvenation. By eliminating aggravated *Doṣas* and *Ama*, it promotes the nourishment of *Rasa* and *Rakta* Dhatus, which are closely associated with hepatic and hematopoietic functions. Evidence suggests that Panchakarma therapies can reduce oxidative stress markers and improve antioxidant defense, indicating their role in cellular repair and rejuvenation.^[7]

Furthermore, seasonal purification demonstrates systemic immunomodulatory benefits. By maintaining the integrity of *Agni* and supporting detoxification pathways, these interventions

strengthen *Ojas*, the Ayurvedic determinant of immunity. Modern studies reveal improvements in inflammatory cytokines, immune cell activity, and overall resilience following structured Panchakarma regimens, underscoring the preventive and health-promotive action of *R̥tu Śodhana* in liver and metabolic disorders.^[23]

11. DISCUSSION

The concept of *R̥tu Śodhana* represents an integrative preventive approach that can be effectively aligned with modern hepatology. While Ayurveda emphasizes the cyclical elimination of aggravated Doṣas to preserve Agni and prevent Ama accumulation, modern hepatology underscores preventive strategies such as lifestyle modification, early screening, and metabolic regulation to reduce hepatic disease burden. Together, these perspectives reveal complementary strengths—Ayurveda providing a holistic, seasonal, and individualized approach, and biomedicine offering diagnostic precision and evidence-based therapeutic monitoring. Integrating these paradigms can create a more robust framework for preventing lifestyle-related liver disorders.^[24]

From a comparative standpoint, Ayurvedic seasonal detoxification differs significantly from modern lifestyle interventions. Conventional medicine recommends diet regulation, exercise, and pharmacological agents to address obesity, diabetes, and fatty liver disease, while Ayurveda prescribes bio-cleansing therapies—*Vamana*, *Virechana*, *Basti*, and *Raktamokṣaṇa*—at specific seasonal junctures. Unlike short-term detox diets popular in modern health culture, *R̥tu Śodhana* is time-bound, season-specific, and personalized, ensuring not only metabolic cleansing but also systemic rejuvenation and strengthening of immunity.^[25]

Nevertheless, limitations exist in the widespread application of *R̥tu Śodhana*. Although classical texts and preliminary clinical studies support its efficacy, large-scale randomized controlled trials validating its impact on specific liver diseases such as NAFLD, hepatitis, or cirrhosis are still lacking. Standardization of treatment protocols, patient eligibility criteria, and outcome measures remains a significant challenge. Future research should focus on bridging these gaps through well-designed clinical studies, biomarker-based assessments, and interdisciplinary collaborations between Ayurveda and modern hepatology. Such initiatives would help establish scientific validation while preserving the individualized, holistic essence of Ayurvedic preventive care.^[9, 26]

12. CONCLUSION

Rtu Śodhana represents a practical and holistic preventive strategy in Ayurveda. By harmonizing the body with seasonal variations, it eliminates aggravated Doṣas, restores Agni, and prevents Ama accumulation, thereby maintaining systemic balance. Its preventive value is especially significant in mitigating the risk of lifestyle-induced liver disorders such as fatty liver disease, obesity-related dysfunction, and hepatic inflammation.

Through procedures like Vamana, Virechana, Basti, and Raktamokṣaṇa, seasonal purification not only supports liver metabolism but also rejuvenates Dhatus and strengthens Ojas, contributing to long-term wellness. In the context of contemporary healthcare and public health policies, *Rtu Śodhana* offers a sustainable, low-cost, and integrative approach to preventive medicine. Incorporating it into community health practices can reduce the burden of lifestyle disorders and promote resilience, making it highly relevant in modern times.

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