



## ***Panchakarma* in Lifestyle Disorders: Beyond Detoxification to Metabolic Reprogramming -A Conceptual and Integrative**

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### **Abstract**

#### **Background**

Lifestyle disorders such as obesity, type 2 diabetes mellitus, dyslipidaemia, hypertension, metabolic syndrome, and non-alcoholic fatty liver disease (NAFLD) represent a global health burden driven by sedentary behaviour, unhealthy diet, chronic stress, and disrupted circadian rhythms. Ayurveda conceptualizes these conditions under *Santarpanajanya Vyadhi*, *Agnimandya*, *Ama*, *Medodushti*, and *Srotorodha*. *Panchakarma*, traditionally viewed as a detoxification therapy, offers deeper systemic effects that extend beyond elimination of toxins to metabolic regulation and functional reprogramming.

#### **Objective**

To critically review the role of *Panchakarma* in lifestyle disorders, emphasizing its mechanisms in metabolic reprogramming, correction of *doshik* imbalance, restoration of *agni*, and long-term disease modification.

## Methods

A narrative conceptual review was conducted using classical Ayurvedic texts (*Charaka*, *Sushruta*, *Ashtanga Hridaya*), commentaries, *Panchakarma* treatises, and contemporary databases (PubMed, Google Scholar, DHARA, AYUSH Research Portal). Ayurvedic pathophysiology was correlated with modern metabolic concepts.

## Results

*Panchakarma* therapies like *Vamana*, *Virechana*, *Basti*, *Nasya*, and *Raktamokshana* demonstrate multi-level actions including correction of insulin resistance, lipid metabolism regulation, gut-microbiome modulation, inflammation reduction, hormonal balance, and autonomic recalibration. Clinical and experimental studies indicate improvements in metabolic parameters, body composition, inflammatory markers, and quality of life.

## Conclusion

*Panchakarma* represents a comprehensive metabolic reprogramming strategy rather than mere detoxification. When applied judiciously and individually, it offers sustainable benefits in lifestyle disorders by addressing root-cause pathology, preventing disease progression, and restoring physiological homeostasis. Integrative models combining *Panchakarma* with modern care merit further exploration.

## Keywords

*Panchakarma*, Lifestyle Disorders, Metabolic Syndrome, *Ama*, *Agni*, *Medodushti*, Insulin Resistance, Integrative Medicine, Ayurveda, Metabolic Reprogramming

## 1. Introduction

Lifestyle disorders have emerged as the leading cause of morbidity and mortality worldwide. Conditions such as obesity, type 2 diabetes mellitus, hypertension, dyslipidaemia, cardiovascular disease, and NAFLD are interconnected through disturbed metabolism, chronic inflammation, oxidative stress, and neuro-endocrine dysregulation [1].

Modern medicine primarily focuses on pharmacological control of biochemical parameters. However, long-term dependence, adverse effects, and inability to reverse underlying metabolic dysfunction highlight the need for holistic strategies.

### Ayurvedic Perspective of Lifestyle Disorders

Ayurveda recognizes lifestyle disorders as consequences of:

- *Santarpana*
- *Agnimandya* (impaired digestive/metabolic fire)
- *Ama* accumulation
- *Medo dhatu dushti*
- *Srotorodha* (channel obstruction)
- *Kapha-Pitta dominance with secondary Vata vitiation*

Diseases such as *Prameha*, *Sthaulya*, *Medoroga*, *Hridroga*, and *Yakrit vikara* are classical equivalents of modern metabolic disorders [2].

### **Panchakarma: Beyond Detox**

Traditionally, *Panchakarma* is described as *Shodhana Chikitsa*, aimed at eliminating morbid *doshas*. Contemporary interpretation suggests that *Panchakarma* induces systemic physiological resetting, influencing metabolism, neuro-endocrine signalling, immunity, and gene expression.

#### **Aim of the Article:**

To conceptualize *Panchakarma* as a modality of metabolic reprogramming in lifestyle disorders through classical Ayurvedic principles and modern scientific correlation.

## **2. Methods**

## 2.1 Literature Search Strategy

Sources included:

- Classical texts: *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*
- *Panchakarma* classics and commentaries
- Databases: PubMed, Google Scholar, DHARA, AYUSH Research Portal

## 2.2 Keywords Used

“*Panchakarma*,” “Lifestyle disorders,” “Metabolic syndrome,” “Ayurveda detoxification,” “*Ama*,” “*Agni*,” “Obesity Ayurveda,” “Diabetes *Panchakarma*.”

## 2.3 Inclusion Criteria

- Classical descriptions of *Panchakarma* in *Santarpanajanya Vyadhi*
- Clinical/experimental studies on *Panchakarma* in metabolic disorders
- Integrative medicine literature

## 2.4 Exclusion Criteria

- Non-Ayurvedic detox systems
- non-documented practices

## 2.5 Analytical Framework

Textual exegesis, *dosha-dhatu-agni* analysis, and correlation with modern metabolic physiology were employed.

## 3. Results / Review Findings

### 3.1 Ayurvedic *Samprapti* of Lifestyle Disorders

1. Excessive calorie intake and sedentary habits → *Kapha & Meda vriddhi*
2. Weak *Jatharagni* → *Ama* formation
3. *Ama* circulates → *Dhatvagni mandya*
4. *Srotorodha* → insulin resistance, dyslipidemia
5. Chronic inflammation → multi-system disease

### 3.2 Panchakarma: Mechanistic Overview

<i>Panchakarma</i>	Primary <i>Dosha</i>	Metabolic Effect
<i>Vamana</i>	<i>Kapha</i>	Lipid mobilization
<i>Virechana</i>	<i>Pitta</i>	Hepatic detox & bile regulation
<i>Basti</i>	<i>Vata</i>	Insulin sensitivity, gut axis
<i>Nasya</i>	<i>Kapha-Vata</i>	Neuro-endocrine balance
<i>Raktamokshana</i>	<i>Rakta-Pitta</i>	Inflammation reduction

### 3.3 Role of Individual *Panchakarma* Therapies

#### A. *Vamana* in Obesity & Dyslipidaemia

- Eliminates excess *Kapha* and *Meda*
- Reduces appetite dysregulation
- Improves lipid metabolism

#### B. *Virechana* in Diabetes & NAFLD

- Corrects *Pitta* and *Yakrit* dysfunction
- Enhances insulin sensitivity

- Improves liver enzymes

### C. *Basti* as Metabolic Regulator

- Central therapy for lifestyle disorders
- Regulates *Apana Vaayu* and gut-brain axis
- Improves glucose homeostasis

### D. *Nasya* in Stress-Induced Disorders

- Acts via hypothalamic-pituitary axis
- Reduces cortisol imbalance
- Improves sleep and appetite rhythms

## 3.4 *Panchakarma* and Metabolic Reprogramming

### Ayurvedic Interpretation

- Restoration of *Agni*
- Removal of *Ama*
- Re-opening of *Srotas*
- Re-establishment of *Dosha-Dhatu-Mala* balance

### Modern Correlates

- Improved mitochondrial efficiency
- Reduced oxidative stress
- Resetting of hormonal signalling
- Modulation of gut microbiota

## 3.5 Evidence from Contemporary Studies

Disorder	<i>Panchakarma</i> Outcome
Obesity	Reduction in BMI, waist circumference
Type 2 Diabetes	Improved HbA1c, insulin sensitivity
NAFLD	Reduced liver enzymes
Hypertension	Improved autonomic balance
Metabolic syndrome	Reduced inflammatory markers

Studies indicate sustained benefits when *Panchakarma* is followed by proper *Samsarjana krama* and lifestyle correction [10–13].

### 3.6 Integrative Model: Ayurveda & Modern Medicine

Modern Limitation	<i>Panchakarma</i> Contribution
Symptomatic drug control	Root-cause correction
Polypharmacy	Dosha-specific intervention
Poor lifestyle adherence	Behavioural retraining
Disease progression	Preventive reversal

## 4. Discussion

*Panchakarma* exerts deep systemic effects that extend beyond detoxification. By targeting *Agni*, *Ama*, and *Srotas*, it initiates metabolic recalibration and improves cellular responsiveness.

### Mechanisms of Action

- Anti-inflammatory and antioxidant effects
- Endocrine and autonomic modulation
- Improved tissue nutrition

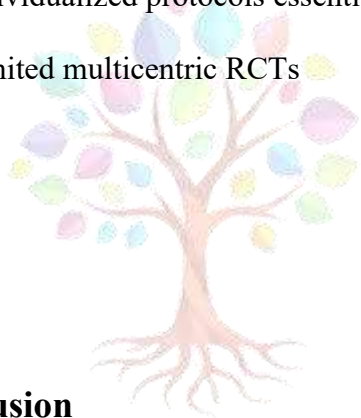
- Gut-microbiome correction

### Clinical Significance

- Reduces disease progression
- Enhances drug responsiveness
- Prevents complications
- Improves quality of life

### Limitations

- Requires expert supervision
- Individualized protocols essential
- Limited multicentric RCTs



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### 5. Conclusion

*Panchakarma* represents a powerful metabolic reprogramming tool rather than a mere detoxification procedure. When applied systematically in lifestyle disorders, it corrects underlying pathophysiology, restores metabolic flexibility, and promotes sustainable health. Integrative *Panchakarma*-based models may offer long-term solutions to the growing epidemic of lifestyle diseases.

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