



Review Article

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## A CRITICAL ANALYSIS ON ADVANCED INSTRUMENTS IN PANCHKARMA

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### Abstract

Panchakarma is the cornerstone of Ayurvedic therapeutics and plays a crucial role in Shodhana (bio-purification) and restoration of doshic balance. Traditionally, Panchakarma procedures were performed manually using basic instruments, which demanded high skill levels and constant supervision. With advancements in medical technology and increasing global acceptance of Ayurveda, Panchakarma has undergone significant modernization. The integration of advanced instruments has improved precision, safety, standardization, hygiene, and patient comfort without compromising classical principles. Modern devices such as automated Abhyanga tables, Shirodhara machines, steam chambers, Nasya , and Basti administration systems have enhanced therapeutic efficacy and reproducibility of procedures. This review article aims to explore various advanced instruments used in Panchakarma, their design, working principles, advantages, and clinical relevance. The article also discusses how technological integration bridges the gap between classical Ayurvedic wisdom and modern healthcare demands, ensuring wider acceptance, improved outcomes, and scientific validation of Panchakarma therapies in the contemporary era.

### Keywords:

Panchakarma, Advanced instruments, Shodhana therapy, Modern Ayurveda, Ayurvedic technology

## **Introduction**

Panchakarma is a specialized branch of Ayurveda that focuses on internal purification and detoxification of the body. The term “Panchakarma” literally means five therapeutic procedures, namely Vamana, Virechana, Basti, Nasya, and Raktamokshana.<sup>1</sup> These therapies aim to eliminate accumulated doshas, toxins (Ama), and metabolic waste from the body, thereby restoring physiological balance and preventing disease recurrence.<sup>2</sup>

Traditionally, Panchakarma procedures were performed using simple instruments made of wood, clay, metal, or natural materials.<sup>3</sup> Although effective, these manual methods were time-consuming, labor-intensive, and highly dependent on the therapist’s skill. With the increasing patient load, demand for standardization, and global exposure of Ayurveda, the need for modernization became inevitable.<sup>4</sup>

The introduction of advanced instruments in Panchakarma represents a harmonious integration of classical Ayurvedic principles with modern engineering and biomedical technology. These instruments help maintain uniform pressure, temperature, flow rate, and duration, thereby enhancing therapeutic accuracy and patient safety.<sup>5</sup> Modern Panchakarma centers now utilize sophisticated devices that improve hygiene, reduce therapist fatigue, and ensure reproducibility of treatments. This article reviews the major advanced instruments currently used in Panchakarma and highlights their role in the modernization of Ayurvedic practice.<sup>6</sup>

## **Materials and Methods**

This review article is based on an extensive study of classical Ayurvedic texts, contemporary Panchakarma manuals, published research articles, institutional protocols, and observations from modern Panchakarma centers. Classical references such as Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya were consulted to understand traditional Panchakarma procedures. Modern literature related to Ayurvedic instrumentation, biomedical devices, and clinical Panchakarma practices was reviewed to identify advanced instruments currently in use.

Information was collected regarding the design, working mechanism, clinical application, advantages, and limitations of each instrument. Only instruments that are commonly used in clinical Panchakarma practice and comply with Ayurvedic principles were included in this review.

## Results

### 1. Automated Abhyanga Tables

Modern Abhyanga tables are ergonomically designed with adjustable height, oil drainage systems, and heating mechanisms. These tables are made of stainless steel or high-grade fiberglass to maintain hygiene and durability. The inbuilt oil collection system prevents wastage and maintains cleanliness during therapy.

#### Advantages:

- Ensures patient comfort
- Reduces therapist strain
- Maintains uniform oil application
- Improves hygiene and workflow efficiency



### 2. Shirodhara Machines

Shirodhara machines are among the most widely used advanced Panchakarma instruments. These devices allow controlled and continuous flow of medicated oil, milk, or decoction over the forehead at a constant temperature and speed.

Components include:

- Flow control unit
- Temperature regulator
- Adjustable nozzle
- Collection and recirculation system

#### Clinical benefits:

- Enhanced therapeutic precision
- Reduced human error
- Better outcomes in stress, insomnia, anxiety, and neurological disorders



### 3. Steam Chambers (Swedana Yantra)



Modern steam chambers are designed for both localized and whole-body sudation therapy. These chambers are equipped with digital temperature controls, timers, and safety valves.

#### Advantages:

- Uniform steam distribution
- Improved safety
- Reduced risk of burns
- Better elimination of toxins

#### 1. Advanced Basti Administration Systems



Basti, being the most important Panchakarma therapy, has also been modernized with disposable Basti kits, pressure-controlled enema devices, and hygienic containers.

#### Features:

- Accurate dosage delivery
- Reduced contamination risk
- Improved patient compliance
- Standardization of procedure

## 5. Nasya and Dhoomapana Units



Modern Nasya units allow precise instillation of medicated oils or powders into the nasal cavity. Temperature-controlled oil warmers and atomizers are used to enhance absorption and comfort.

## 6. Panchakarma Oil Heaters and Storage Units



Digital oil heaters with thermostatic control ensure that medicated oils are maintained at optimal therapeutic temperatures. Stainless steel storage units help preserve oil quality and prevent contamination.

## Discussion

The integration of advanced instruments in Panchakarma has significantly transformed its clinical practice. While classical Panchakarma emphasized manual skill and individualized therapy, modern instruments enhance accuracy without violating Ayurvedic fundamentals. The controlled delivery of therapies ensures consistent results, making Panchakarma more acceptable to evidence-based medical frameworks.

Advanced instruments also play a vital role in improving hygiene standards, which is crucial in hospital and international healthcare settings. They reduce therapist fatigue and dependency on manpower, making Panchakarma economically viable and scalable. However,

it is essential that practitioners maintain proper Ayurvedic knowledge and do not rely solely on machines, as clinical judgment remains central to effective therapy.

### **Conclusions**

Advanced instruments in Panchakarma represent a significant step toward the modernization and global acceptance of Ayurveda. These devices enhance precision, safety, standardization, and patient comfort while preserving the core principles of classical Shodhana therapy. The judicious use of technology bridges the gap between traditional Ayurvedic wisdom and modern healthcare demands. Future developments should focus on evidence-based validation, cost-effective innovations, and practitioner training to ensure sustainable growth of Panchakarma in the modern era.

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