



## Role of Panchakarma in Non- Communicable Diseases

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**Abstract:** The global burden of non-communicable diseases is increasing rapidly, and adopting a healthy lifestyle is an important strategy to combat it. Ayurveda can play an essential role in this regard, as the main aim of Ayurveda is to prevent diseases by following a healthy lifestyle. However, to implement such traditional knowledge (that is based on a healthy lifestyle). Principles of Ayurveda) in actual practice, a systematic process should be followed. Ayurveda is a traditional system of medicine that applies holistic principles that primarily focus on personal health. Ayurveda originated in India and is one of the oldest healthcare traditions. Ayurveda is often known as the "science of life" because "Ayu" in Sanskrit means life, and "Veda" means science or knowledge. Vagbhatt's Ashtanga Haridyama, Charaka Samhita, Sushruta Samhita (400 BC - 200 AD) and Ashtanga Hrudayam contain detailed descriptions of over 700 herbs and 6,000 sutras. This systematic process must involve serious research (i.e., development and evaluation). Ayurvedic-based lifestyle interventions and behavioural change. This article explains the importance of Panchakarma therapies or procedures mentioned in Ayurvedic classical textbooks and their implementations to counter Non- Communicable Diseases. As a result, there is a greater goal to accomplish. Traditional knowledge of Ayurveda is found in actual practice that is useful for society. The aim is to explore and seek solutions or treatment options available in Ayurvedic classical texts for Non-Communicable diseases. The source for this study is collected from classical Ayurvedic books and commentaries, modern medical science textbooks and different articles from Pubmed, DHARA, GoogleScholar etc. Exploration of various Panchakarma procedures or therapies described in Ayurvedic classical texts helps us better understand pathologies of Non- Communicable diseases from their root causes and allow us to understand how potent Panchakarma therapies have a healthy influence to counter Non- Communicable diseases.

**Keywords:** Panchakarma in NCDs, Ayurveda for Non- Communicable Diseases, Risk factors of NCDs, Ayurvedic healing for NCDs, Ayurvedic Concepts Related to Non- Communicable Diseases

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## I. INTRODUCTION

Non-communicable diseases or Lifestyle disorders are mainly diseases caused by a person's daily habits. Habits that distract people from activity and lead to a sedentary lifestyle can cause many health problems and chronic non-communicable diseases<sup>1</sup>. Lifestyle disorders are diseases whose appearance is mainly based on people's daily habits and is a consequence of people's inappropriate attitude toward the environment. Lifestyle disorders affect the general public and the doctors and nurses who administer their prevention<sup>2</sup>. Ayurveda offers the best solution in the form of proper nutrition, *Dincharya* (daily diet), *Ritucharya* (seasonal diet), detoxification like *Shodhana Karma* through *Panchakarma* therapy, two cleansing methods, medicines and rejuvenating treatments. Ayurveda describes the three central values of *Ahar*, *Nidra* and *Brahmacharya*, considered essential factors for a healthy life<sup>3</sup>. Lifestyle disorders include atherosclerosis, heart disease, stroke, obesity, type 2 diabetes and diseases related to smoking, alcohol and drug abuse. People are susceptible to various diseases depending on their lifestyle and work habits, including a varied diet and healthy lifestyle. These diseases are preventable and can be controlled through diet, lifestyle and environment management change through Ayurveda<sup>4</sup>. In *Ashtanga Hrudayam* and *Ashtanga Sangriham* there is a separate chapter called *Dinacharya*. Although Ayurveda is an ancient health science, it can treat health problems such as lifestyle disorders that have emerged in this new era. *Dincharya*, as described in Ayurveda, is part of Indian culture. But the westernization of our culture causes lifestyle disorders such as diabetes, cardiovascular disease, high cholesterol, high blood pressure, stroke and depression<sup>5</sup>. Lifestyle events, such as hypertension, diabetes, obesity and cardiovascular disease, have multiplied over the last two decades due to environmental pollution, the burden of professional work, stress, sick lifestyle and overall diet. In general, other lifestyle diseases include depression, arthritis, fatigue, arthritis, metabolic disorders, premature destruction, premature ageing, respiratory diseases and women's disorders. Almost all of them are related to improper consumption and nutrition, lack of relaxation and concentration, a constant feeling of anxiety, inattention or tremors, inactivity or occupation, insufficient exercise and a comfortable lifestyle<sup>6</sup>. Non-Communicable disorders are characteristic of diseases whose appearance is mainly based on people's daily habits and is an inadequate consequence. Lifestyle disorders are not the only affecting common people as well as the doctors and nurses who administer their prevention are also getting affected by them, so there is a high need to look for other options other than modern science to low down medical debt. The aim and objective of this review are to explore various *Panchakarma* therapies as *Panchakarma* is a unique Ayurvedic healing system

with actions related to the five central healing systems for internal body cleansing which will be effective in countering ailments related to Non- Communicable diseases. *Panchakarma* cleansing processes allow the biological approach to return to homeostasis and rejuvenate rapidly and it is a special Ayurvedic method that removes excess *Doshas* from body<sup>7</sup>. The inability of modern medicine to prevent serious health burdens prompts us to return to the primal nature of detoxification. *Panchakarma* is an effective remedy for the treatment of autoimmune, neurological, psychiatric and locomotor diseases of chronic and metabolic disorders<sup>8</sup>. Work has been done on exploring Ayurvedic concepts in relation with Non- Communicable diseases<sup>9</sup>, but the proper connection between Ayurveda and Modern science concepts, as is needed with good graphical demonstration (figures) which is done in this article. Ayurveda approach to a healthy lifestyle like *Dincharya* (Daily Regimen), *Ratricharya* (Night Regimen) and *Ritucharya* (Seasonal Standard), are described in detail in Ayurveda classic books (*Charaka* (200-400), *Sushruta* (*Sushruta* (200-400) And *Vagbhata* (600-500 BC)<sup>10</sup>). Food plays an important role in maintaining vitality in critical situations. Food which is not given according to the digestive capacity of the patient (*Agni*) results in the formation of *Aama* (Toxic metabolites). It blocks most nutrient transport channels (*srotas*) and worsens the condition. So, such easily digestible food as Green Gram soup (*Mudhga Yusha*) is recommended to give for an important event. This means healthy eating is convenient for patients and effective in the treatment of serious diseases<sup>11</sup>. Ayurveda always emphasizes the prevention of diseases Instead of starting treatment after exposure. This is prevention better than treatment According to Ayurveda, it is the root cause of everything<sup>12</sup>. Diseases are violations of the laws of behaviour and morality However to Activate such classic knowledge (ie healthy Ayurveda -n based on lifestyle) real) Education must adhere to the formal process. The modern way of life, like less physical work, less manual work, more attractive but unhealthy food, and very late night work, are the modifiable points, which are in the persons' hands and can be altered for better<sup>13</sup>. *Panchakarma* results in the elimination of the toxic accumulations and restabilizes the doshas to their normal state and balanced proportions<sup>14</sup>. *Panchakarma* treatment is better than *Sanshamana* (Oral medications) as a person who undergoes *Panchakarma* has fewer chances of developing the disease again for longer duration<sup>15</sup>.

### 1.1 RoganusaraPanchakarma

*Panchakarma* procedures are indicated and effective more only when they are prescribed according to the Predominant *Dosha* present according to different diseases (depicted in Table No.I)

**Table No.1:RoganurasaPanchakarma**

Diseases	Dosha Vitiation	Specific Karma
Asthma, Chronic pulmonary obstructive disease (COPD), thyroid, Hyperacidity, Nausea, Obesity, Diabetes	Kapha Vitiation	Vamana
Diabetes, Anemia, Malnutrition syndrome, Skin disorders	Pitta Vitiation	Virechana
Spondylosis, Cervical Spondylosis, Disc Herniation, Sciatica, Avascular Necrosis of Bone	VataVitition	Basti
Alopecia, Premature greying of hair, Insomnia, Headache, Sinusitis, Frozen Shoulder	Tridosha (Kapha specifically)	Nasya
Acne, Pimples, skin discolouration	Rakta(Blood)	Raktamokshana
Obesity, Excessive sweating, Foul skin odour	Tridosha	Udwartana

## 1.2 Need of study

Industrialization, socio economic development, Urbanization, change in age structure, and changes this has put India in a lifestyle position Combating the growing burden of non-communicable diseases. In India, non-communicable diseases (NCDs) accounted for 40% of all hospitalizations and 35% of all outpatient visits in 2004<sup>16</sup>. The four leading chronic diseases in India viz If you measure their distribution, they are in descending order Cardiovascular diseases (CVD), diabetes, chronic obstructive pulmonary disease (COPD) and cancer. The prevalence of all four diseases is projected to continue to increase in the future<sup>17</sup>. The disorders which come under non-communicable conditions are-

- Cardiovascular diseases
- Diabetes Mellitus
- Stroke
- Cancer
- Accidents and injuries
- Chronic lung diseases

So, these fatal disorders cause too much damage to people's health and economic status also, which hinders a high need to seek too much safer and more economical solutions or treatments with natural foundation.

## 1.3 Risk factors for Non- Communicable Diseases that worsen the Situation

The occurrence of non-communicable diseases (NCD), such as cardiovascular disease, diabetes, cancer and kidney disease, and genetic and respiratory diseases, is increasing significantly in the Eastern Mediterranean region. Non-communicable diseases currently account for 47% of the burden of disease in the region, and this figure is expected to rise to 60% by 2020. Modifiable risk factors such as smoking, unhealthy diet and lack of physical activity, diabetes, obesity and high cholesterol are the main causes of the global NRT epidemic. The relative importance may vary between categories Population, these common risk factors 75% can explain chronic diseases. The Eastern Mediterranean Region of the World Health Organization (WHO) is exposed to risk factors for non-communicable diseases due to changing risk due to significant lifestyle changes in many countries in the region, especially in the GCC countries. Obesity is mainly recorded among children, teenagers and young people. Overweight and obesity have doubled or more since 1980. Changes in processing, production and food (fast food) have affected health in most countries of the region. A review of available data from the Eastern Mediterranean region shows that men

and women are at greater risk<sup>18</sup>. The main risk factors for non-contact persons are Disease, smoking, alcohol abuse, sitting position, Unhealthy lifestyle and diet. If such can exist with adequate care, 40 to 50 per cent of premature deaths from non-communicable diseases can be prevented<sup>19</sup>.

## 1.4 Use of Tobacco

According to NFHS3, smoking prevalence among men and women aged 15-49 was 32.7% and 1.4%, respectively. In the context of smoking, According to the form, the prevalence in men and women is 57% and 10.8%, respectively<sup>20</sup>.

## 1.5 Use of Alcohol

Patterns of alcohol consumption vary by geographic location. In the states of Punjab, Andhra Pradesh, Goa and the Northeast, the proportion of men who drink alcohol is higher than in other parts of the country. Women consume the most alcohol in the states of Arunachal Pradesh, Assam and Sikkim<sup>21</sup>.

## 1.6 Obesity and lack of physical activity

Being overweight are more common among women, urban groups, and high socioeconomic status (SES) groups<sup>22</sup>. The prevalence of overweight and obesity in India has increased slightly over the past decade but has reached relatively high levels in some urban and high-SES groups. A sizeable multisite study was conducted in 10 industries. A higher combined prevalence (BMI  $\geq 25$ ) of 30.9% was reported in urban areas<sup>23</sup>.

## 1.7 Low amount of fruits and Vegetable intake

Low consumption of fruits and vegetables among many countries in the region increased the prevalence of cardiovascular disease diseases and certain cancers. Simultaneously Over time, lifestyle changes and rapid urbanization have led to a decrease in physical activity and this has greatly contributed to the increased regional prevalence of obesity and diabetes<sup>24</sup>.

## 1.8 The economic burden on Non- Communicable diseases

Understanding and collecting information on economic impact through statistical changes and the risk of obtaining NCCs due to changes in dietary additives, reducing physical activity, physical inaction, excessive smoke and its use. Tobacco and urbanization. About 50 % increased NCD pocket costs, from 31.6 % in 1995-96 to 47.3 % in 2004,

with a lot of money used to purchase medicines, diagnostic tests and medical equipment<sup>25</sup>.

□ Considering all points above, there is a high need to initiate or lay emphasis on traditional or natural treatment option, which is much safer and has less effect on the economic

fraternity like various *Panchakarma* therapies or natural detoxification processes.

□ A categorical representation of risk factors for NCD's depicted in Table no.2

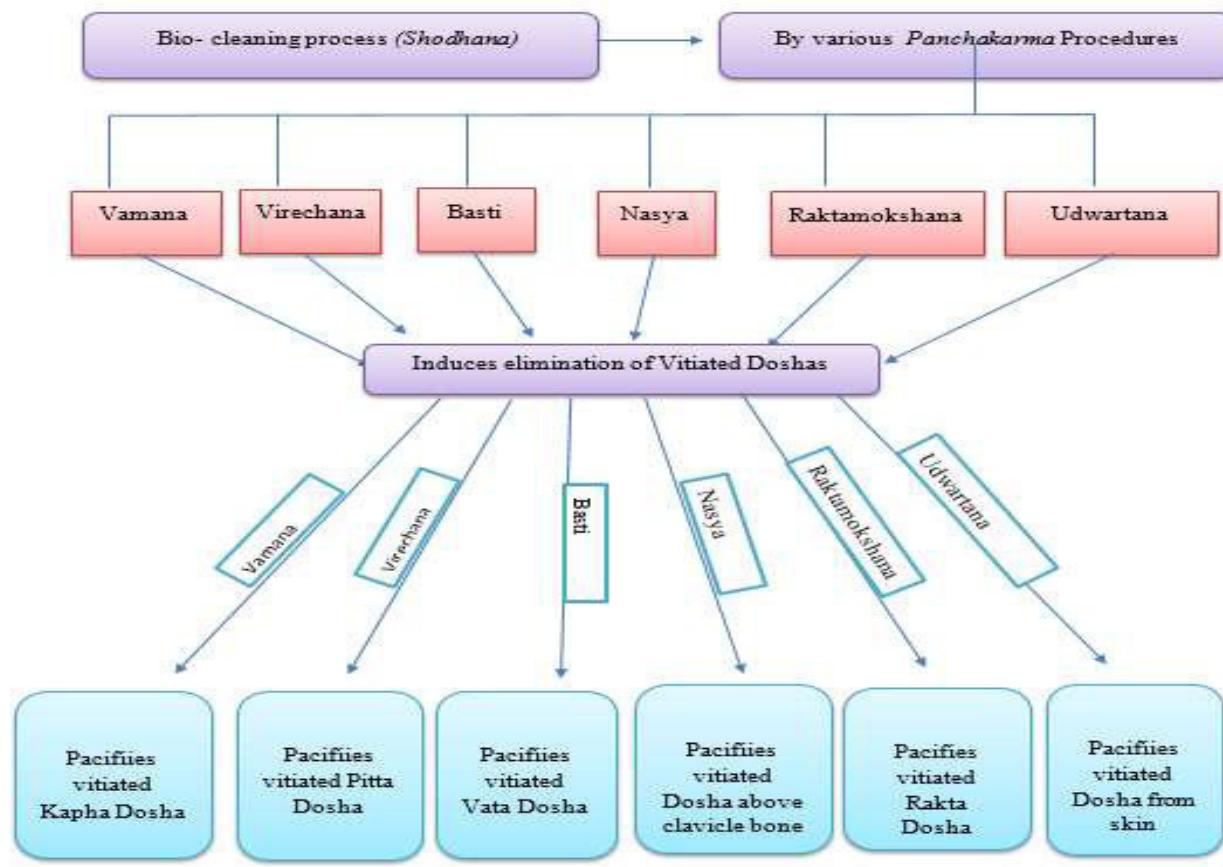
**Table No. 2: Categorical representation of risk factors for NCDs-**

Sr. No.	Category	Risk Factors
1	Modifiable behavioural risk factors	Unhealthy diet, Physical inactivity, Tobacco use, Alcohol consumption, smoking, Stress
2	Metabolic/Physiological risk factors	Hypertension, obesity, Hyperglycemia, Hyperlipidemia, Heredity disorders
3	Environmental Factors	Air pollution exposure, Noise pollution exposure, Sun exposure level
4	Non- Modifiable risk factors	Age, Gender, Ethnicity, Heredity

Various modalities mentioned in Ayurvedic classical textbooks for the prevention of Non-communicable diseases are depicted in table No. 3

**Table No. 3: Various modalities mentioned in Ayurveda for the prevention of NCDs-**

Sr. No.	Modalities	Other modalities
1	Dinacharya	Suppressing of Dharaniyavegas
2	Ritucharya	No suppression of Adharniya Vegas
3	Tyro-upstambha	No consumption of Virudha-Ahara
4	Sadvrittha	Not to do Pragyapradha
5	Achararasyana	Not to do Hina, Mithya and Ati Yoga of Indriya, Kaya, Vak and Mana
6	Ashtanga Yoga	Guna, Matra, Desha and Kala Virudhaahars consumption should be avoided



**Fig No.1 Benefits of Bio- the cleaning process (Shodhana)<sup>36</sup> have been displayed in fig no.1**

## 2. DISCUSSION

This review mainly focuses on exploring *Panchakarma* Therapies- *Panchakarma* is a unique Ayurvedic healing system with actions related to the five central healing systems for internal body cleansing. *Panchakarma* cleansing processes allow the biological approach to return to homeostasis and rejuvenate rapidly.

### 2.1 *Panchakarma includes the following five main procedures*

- Emesis therapy (*Vamana*): to expel bad *Kapha dosha* through the mouth.
- Purgative therapy (*Virechana*): the elimination of acute *pitta dosha* through the anus
- Enema (*Basti*): to remove acute *Vata dosha* as a prescribed decoction of herbs or medicated oil rectally.
- Prescription for nasal therapy (*Nasya*): to remove the *Doshas* above the collarbone.
- (*Urdvajatru*) by administering medicine through the nose.
- Blood supply therapy (*Raktamokshana*): to remove toxic blood (*Rakta*).

Other *Panchakarma* treatments include oil massage (*Abhyanga*), which stimulates sweating Treatment, Sudation (*Svedana*), treatment with liquid drops on the forehead (*Shirodhara*), Powder massage (*Udvardhana*), oil therapy (*Kandusha*), etc<sup>26</sup>. The therapeutic importance of each *Panchakarma* procedure in Non- Communicable diseases is as follows-

### 2.2 *Vamana*

*Vamana* is done in spring, around March and April, to eliminate *Kapha dosha*. It helps treat conditions such as bronchial asthma, allergic bronchitis, rhinitis, sinusitis, migraine, hyperacidity, indigestion, anorexia, obesity, overweight, dyslipidemia, diabetes, acne vulgaris, psoriasis, eczema, urticaria etc<sup>27</sup>. Through *Vamana Karma* (induced emesis) vitiated *Kapha Dosha* expels out from the body and gives relief from disorders caused by the vitiation of *Kapha Doshas*.

### 2.3 *Virechana*

*Virechana* is shown in the autumn season (*Sarath*) (around mid-September to mid-November). It removes contaminated *Dosha* in general and *Pitta Dosha* in particular through the anus. Cleaning means cleaning Bowel, but *Virechana* is cleansing the whole body. Studies have shown that *Virechana* reduces glucose production in the liver and helps prevent high blood sugar levels<sup>28</sup>. Through *Virechana Karma*(induced purgation) vitiated *Pitta Dosha* expels out from the body and gives relief from disorders caused by vitiation of *Pitta Doshas*

### 2.4 *Basti (Enema Therapy)*

The process of administering medicine through the rectum is called *Basti*. There are two types based on raw materials. *Basti* with decoction (*NiruhaBasti*) and medicated oils/ghee (*Anuvasana Basti*). Through *Basti Karma* (medicated enema)

vitiated *Vata Dosha* expels out from the body and gives relief from disorders caused by vitiation of *Vata Doshas*

### 2.5 *Niruha Basti*

Facilitates peristalsis and improves nutrient absorption through the cecum and ascending colon. *Mustadi Yapanabasti* (a potent form of *Basti*) significantly reduces TB-specific IgG and IgM. This indicates the modulating effect of pasteurization on the immune system<sup>29</sup>.

### 2.6 *Anuvasana Basti*

Affects immune function by modulating helper T cells, white blood cells, cytokines and the lymphatic system. The internal nervous system of the gastrointestinal tract is connected to the central nervous system. The ENS works together with the CNS. Stimulation of the ENS by chemotherapy or mechanoreceptors stimulates the involved CNS. This may be one of the reasons for *Basti's* effectiveness in neurological diseases such as stroke. Participle for direct application. The role of the gut microbiome should also be considered here. When *Basti* is used, there can be a change in the gut microbiome that secretes an enzyme that can stimulate the CNS<sup>30</sup>.

### 2.7 *Oil Message (Abhyanga Karma)*

A total of 10 healthy men and ten healthy women received 1 hour of oil massage and studied its effects on the experience of mental stress. A significant decrease in the understanding of mental stress was observed. Reduces cortisol and anxiety. Increases blood and lymph flow. Other associated symptoms such as pain, Reduced insomnia and fatigue<sup>31</sup>.

### 2.8 *Shirodhara (Pouring of medicine over the forehead)*

Pouring medicated oil on the forehead (*Sirodhara*): 16 volunteers underwent this procedure. Mood and stress, electrocardiogram (ECG), Electroencephalogram (EEG) and individual biochemical stress markers were assessed. Significant improvement was seen in mood scores and stress levels. A significant decrease in respiration, heart rate and diastolic blood pressure is mentioned as a relaxed state of consciousness after *Shirodhara* is associated with increased alpha rhythm on the EEG. This results in a state of conscious relaxation similar to the relaxation response seen during meditation<sup>32</sup>.

### 2.9 *Shiroabhyanga (Head Message with Oil)*

Research has shown that head massage (*Shiroabhiyanga*) with medicated oil (*Mahabringrajtila*) is effective in reducing general body pain (*Angamartha*), indigestion (*Abhakti*), dizziness (*Brahama*), yawning etc. (*Jirimba*) and heaviness of the head (*Shirokaurava*). Sleep duration is also reported it is insisted for 6-7 hours<sup>33</sup>. *Shiroabhyanga* pacifies vitiated *Vata Dosha* from the Head region.

### 2.10 *PratimarsaNasya (Nasal instillation of oil in less quantity)*

Small Volume Nasal Oil Injection (*Pratimarsha Nasya*): Research has shown that daily use of *Pratimarsha Nasya* is effective in controlling flare-ups and treating generalized anxiety disorder (GAD)<sup>34</sup>. *Nasya Karma* expels out vitiated or accumulated *Doshas* that remain in organs above the clavicle bone from neck to head

### 2.11 *Udwartana (Powder Message)*

Powder massage is very effective in recovery. Reveal the structure and channels of the skin. In a clinical trial, ten obese people underwent this treatment. *Gula Kolatadi Churna* massage for seven days. A significant decrease in body weight was reported (average weight decreased from 84.7 to 81.8)<sup>35</sup>.

## 3. CONCLUSION

Therapies come under *Panchakarma*, as medicine is effective in treating many pathological conditions. Daily performance of

*Panchakarma* helps prevent diseases and maintain health. The main preventive, curative and promotional aspects should be emphasized through *Panchakarma*. It should be focused on comprehensive health care of the community. An evidence-based approach to *Ayurveda* through *Panchakarma* could lead to a global health revolution

## 4. AUTHOR'S CONTRIBUTION STATEMENT

Dr. Shweta Parwe conceptualized the data and designed the study. Dr.Varinder Singh wrote and drafted the manuscript. Dr.Punam Sawarkar, Dr. Puja Srivastava and Dr.Milind Nisargandha provided valuable inputs towards designing the manuscript. Finally, all authors read and approved the final version of the manuscript.

## 5. CONFLICT OF INTEREST

Conflict of interest declared none.

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