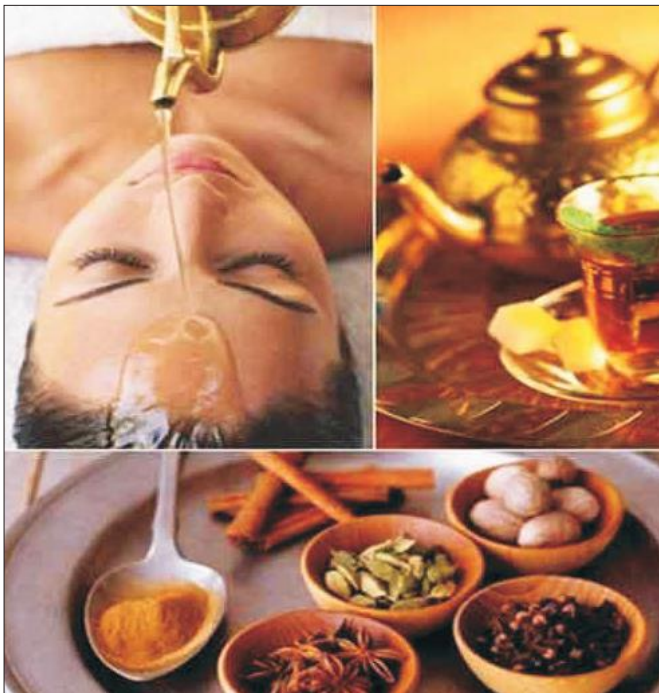


## A REVIEW ON THE PHYSIOLOGICAL BASIS OF PANCHAKARMA THERAPY

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### ABSTRACT:

This article has been written on the background of increase in concern over the indiscriminate use of *Panchakarma* among the doctors and public. *Panchakarma* therapy is so widely practiced in the entire world; the word '*Panchakarma*' may even be more popular than the word '*Ayurveda*' as far as the global scenario is concerned. *Panchakarma*, hence acquire distinctiveness as a system of treatment having preventive and curative dimensions. Still, the scientific basis of *Panchakarma* therapy is seldom explored. This article tries to explain the mechanism of action of *Panchakarma* therapy based upon some physiological facts, so that some guidelines can be formulated to standardize the practice of *Panchakarma* and to make it acceptable to the scientific community. This article is an independent

review of *Panchakarma* therapy from a physiological perspective.

### KEYWORDS:

Panchakarma, Physiology, Snehana, Swedana, Lipid, Bile, Homeostasis.

### INTRODUCTION

The advantage of *Panchakarma* therapy over physiotherapy and physical medicine has often been referred to as addition of 'logic'. In other words, *Panchakarma* is a 'physiological therapy', which is intended to make corrections in the physiological response of the body in various conditions. This response helps the body to re-establish the normal functioning or sometime increase the precision of the body activities so that it does not succumb to diseases due to change in climate or increase in stress. *Ayurveda* gives foremost importance to the *sodhana chikitsa* which is being facilitated through *panchakarma* <sup>[1]</sup>. The concept of *sodhana* has been evolved through the application of the knowledge of *tridosha* theory and *dosha-dhatu-mala* interactions <sup>[2]</sup>, which can be together called as *Ayurvedic* physiology.

Prior to *sodhana*, there are certain procedures followed in order to increase the efficacy of *sodhana*. This includes *snehana* and *swedana* <sup>[3]</sup>. The scheme of *snehana* and *swedana* are so designed that, when

applied correctly, they are able to mobilize the various unwanted substances from different parts of the body. It is being referred to as the transport of vitiated *doshas* to the *koshta*<sup>[4]</sup>. When they reach the *koshta*, it is very easy to expel them out to bring back the homeostasis<sup>[5]</sup>. In other words, due to the effect of *sodhana*, certain crucial physiological activities in our body are 'reorganized' according to a schedule so that these can help the body to fight against or recover from the disease. This added advantage of *sodhana chikitsa* makes it superior to *samana chikitsa*<sup>[6]</sup>.

### WHY SHOULD WE BEGIN WITH SNEHANA?

Any biochemical substance produced in our body, can be considered as either fat soluble or water soluble<sup>[7]</sup>. Since the medium in our body viz. plasma is composed of water, the water soluble substances can be easily carried through blood<sup>[8]</sup>. But, the story of lipids is exceptional. Lipids are strangers to human body as far as they are in the GIT or in the blood. They need the assistance from substances like bile salts, proteins etc, for digestion, absorption and circulation<sup>[9]</sup>. But, when the lipids reach a cell, the story is different. Lipids acquire absolute freedom when they come to cells. They can freely move to and from the cell through the cell membrane, while others need to depend upon channels, which are controlled by chemicals, voltage, pressure etc<sup>[10]</sup>. Thus lipids and lipid soluble substance can reach to the cells in every corner of the body and no barriers, not even the blood-brain barrier can prevent their transport<sup>[11]</sup>.

So, to mobilize certain fat soluble substances from the cells and from the intercellular spaces, we have to depend upon lipids themselves. Or lipids can be used as the medium for the drugs to reach the target cells. If the dose of drug-lipid complex is less, it serves some nutritive functions only. If its dose is medium, it also serves as a curative agent. And if its dose is high, the cleansing mechanism starts to work<sup>[12]</sup>. The mechanism of purification by *snehana* can be explained as follows.

Liver is the centre of detoxification in our body<sup>[13]</sup>. Body tries to expel out unwanted substances by carrying them either to liver (fat soluble substances & toxic substances) or to kidneys (water soluble substances). By undertaking *snehapana* for, say 7 days, the absorbed fat will mobilize and carry the unwanted substances to liver so that they can be metabolized or eliminated, provided the functioning of liver is within normal limits. The toxic substances as well as the substances which are not catabolized are excreted through bile<sup>[14]</sup>. The secretion of bile into duodenum is in turn dependent upon the amount of fat reaching the duodenum<sup>[15]</sup>. So, by administering huge amount of lipids in a cumulative way, apart from mobilizing the waste products, we can induce more and more secretion of bile into duodenum, which also means more and more toxins and waste products in the body come into duodenum that can be eliminated out. This whole process is well assisted by the application of *swedana*.

### WHAT ARE THE PRECAUTIONS TO BE TAKEN DURING SNEHAPANA?

1. Risk of ketosis – on a high fat- low carbohydrate diet, there is chance for ketosis<sup>[16]</sup>. To prevent this, after the digestion of fat, some easily digestible carbohydrate diet (eg:- *peya* or porridge) should be administered.
2. The functional status of liver is very important to detoxify or remove fat and fat soluble substances<sup>[17]</sup>. So, *snehapana* should be done very cautiously in patients with signs of hepatic disorder.
3. The occurrence of vomiting or purgation indicates that the tolerance point of the body towards the lipids has been reached<sup>[18]</sup>. And in such conditions, we should not insist on completing 7 days for *snehana*; instead should go for the optimum *sodhana* if possible, or repeat the same after a cycle of low dose *snehapana* (*samana*).

### WHAT IS THE ROLE OF SWEDANA IN PANCHAKARMA?

*Swedana* is considered as a *poorvakarma* of *sodhana chikitsa*<sup>[19]</sup>. But, as far as *keraleeya panchakarma* is concerned, *swedana* has many dimensions including that of an individual treatment

method having some *sodhana* attributes. Since water is the main content of sweat, most of the water-soluble waste products can be eliminated through *swedana*<sup>[20]</sup>. And when *swedana* is done with a lipid medium as in *snigdhaswedana* procedures, many lipid soluble substances can be exchanged through the skin even though in minute quantity.

In *swedana*, we are inducing sweating by the application of heat. Sweating is achieved by cutaneous vasodilatation<sup>[21]</sup>. Since it is an induced one, when the stimulus i.e. the heating is withdrawn, body will try to keep the thermal homeostasis by causing cutaneous vasoconstriction<sup>[22]</sup>. The net effect is an increase in the blood flow to the internal organs particularly to the GIT. Thus *swedana*, when coupled with *snehana*, serves to carry the unwanted substances (which are not otherwise removed) to the GIT in the form of many secretions. So, apart from causing the excretion of some substances through the skin, *swedana* also causes many unwanted materials to secrete into the GIT, with the intention that they can be eliminated out by the main *sodhana* procedures.

### HOW TO SELECT THE MAIN SODHANA PROCEDURE?

The elimination of unwanted substances can be done through expectoration, vomiting, purgation or enema<sup>[23]</sup>. When the drug intended for *sodhana* is administered through the nose, (*nasya*) it stimulates the nasal mucosa, which is a pivotal factor in the first line of defense or innate immunity<sup>[24]</sup>. Also, it can spread to the sinuses and its cleansing mechanism can be used to cure various diseases of head<sup>[25]</sup> and also some systemic diseases of neuro endocrine origin<sup>[26]</sup>. Here, the area of the body from which the unwanted materials are being mobilized is restricted down to the shoulder region<sup>[27]</sup>. It means that the oil and heat effect together with the drug effect of *nasya* increase the circulation of head and neck region so that many immune products are carried to and secreted through nasal mucosa.

The decision between vomiting and purgation is taken at the anatomically and physiologically distinct ileo-colic junction<sup>[28]</sup>. If the area above the ileo-colic junction is filled with food when the irritant type drug is administered, the natural elimination will be done as vomiting<sup>[29]</sup>. The anti peristaltic waves begin from terminal ileum and they become progressively stronger so as to mobilize the contents from duodenum onwards. In this case, the drug should be administered when the stomach is full and maximum secretions have been produced. Vomiting should be continued till the appearance of bile in the *vomitus*, so that the duodenal contents are also removed. This helps not only to eliminate the unwanted substances excreted through bile, but also to sustain the acid-base homeostasis<sup>[30]</sup>.

If the irritant type drug is administered in empty stomach, in the early morning, the area of GIT after ileo-colic junction, namely large intestine will be filled with feces. So there will be purgation instead of vomiting. When this is administered after the *sneha-sweda* procedures, there is accumulation of toxins and waste products carried to the GIT and all these can be eliminated out. The power of elimination is more in the *vamana* and *virechana* types of *sodhana* as they can extend their decontamination mechanism to the whole body and also can mobilize substances which are carried to the GIT in a comprehensive way. The categories of substances eliminated are different in *vamana* and *virechana*. This is being referred as '*vamana is kaphasamana*' and '*virechana is pittasamana*.'<sup>[31]</sup>

The enematic type of *sodhana* is done as a combination of purificatory enema and supportive enema<sup>[32]</sup>. Instead of affecting the whole GIT which harbor many enzymes and secretion, combined in the core concept of Agni in *Ayurveda*, vasti is intended to mobilize the portion below ileo-colic junction, thus without having direct impact on Agni<sup>[33]</sup>. Purificatory enema in the form of *kashaya vasti* uses various substances like salt, honey, water, oil etc., which can induce secretions and movements from the large intestine by nervous stimulation. Since there is a large network of neurons from both the Enteric Nervous System (ENS) and the Autonomous Nervous System (ANS) in the area of large intestine [34], these may get irritated due to overstimulation by the use of drugs in *kashaya vasti*. So to alleviate this, supportive enema

with ghee or oil is needed <sup>[35]</sup>, which is being referred to as *sneha vasti*.

## DISCUSSION

The *panchakarma* therapy has preventive and curative dimensions, which can evoke purificatory as well as corrective responses in the body. These procedures indirectly influence the functioning of cardiovascular, nervous and endocrine systems apart from directly inducing digestive and metabolic changes. The pre and post regimens for *panchakarma* therapy also facilitate the fast recovery or revitalization of the body in diseases and healthy conditions respectively.

To summarize, re-establishment of physiology is achieved through *sodhana* therapy in many different ways. First of all, it is intended to remove the excess water that has been trapped in the intercellular spaces. Together with water, it also removes various waste products and toxins. At the same time, it activates the neuro-endocrine axis and can thus control many body functions including the actions of many core enzymes and reduce the free radical load of the body. The overall effect of all these activities should come into our mind whenever we plan a scheme for *sodhana chikitsa*.

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