

**TRANSFORMING TOXICITY INTO THERAPY: A FOUNDATIONAL STEP IN  
SCIENCE OF SHODANA IN RASASHASTRA****\*Dr. Chaithra M.**

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**ABSTRACT**

Rasashastra is an important branch and always been a treasure for ayurveda due to its formulations which assures fast recovery of patients as compare to plant based medicine. In this science there will be usage of rasa, maharasa, uparsa, ratnas etc. these minerals or metals may contain various impurities and toxins. If administered as such, they may prove injurious and harmful for health. So initially they need to undergo a mandatory process known as shodhana. “Shodhana” is an essential method in pharmaceutical process and used for purification of metals and minerals. This is first step in pharmaceutical industry, so it has got unique importance. Shodhana helps in the removal of physical, chemical and toxic impurities and also improves the therapeutic efficacy of the drug. Various methods such as Swedana, Mardana, Nirvapa, Bhavana and Prakshalana are employed using different purification media like Gomutra, Triphala Kashaya, Takra and Kanji. The present review aims to explain the concept, objectives, types, methods and significance of Shodhana in Rasashastra.

**KEYWORDS:** Shodhana, Rasashastra, Purification, Ayurvedic pharmaceutics, Detoxification.**INTRODUCTION**

Ayurveda is a traditional system of medicine that emphasizes the use of natural substances for the prevention and treatment of diseases. Among its various branches, Rasa Shastra occupies a unique position because it deals with the pharmaceutical processing of metals, minerals and poisonous substances for medicinal use. These substances are known to possess potent therapeutic properties when properly processed. However, raw metals and minerals often contain impurities and toxic elements. Direct administration of such substances can lead to harmful effects on the human body. To overcome this problem, ancient ayurveda scholars developed specific purification techniques known as Shodhana. Shodhana is considered the first and essential step in the pharmaceutical processing of many drugs in rasashastra.

**Historical Background**

The concept of purification in ayurveda can be traced back to classical texts such as charaka Samhita while

explaining samskara in the context of ashtaahara vidhi vishesha ayatana<sup>[1]</sup> (Rules & Regulations regarding intake of food). However, detailed procedures of purification were later elaborated in rasashastra texts like Rasa Ratna Samuccaya and other medieval works (8<sup>th</sup> to 9<sup>th</sup> century AD).<sup>[2]</sup> With the development of rasashastra during the medieval period, the use of metals and minerals in therapeutics became more common. This led to the systematic development of shodhana techniques to remove impurities and reduce toxicity.

**Nirukti (Etymology)***Shodhayati iti* (Shudh+nich+pluth)<sup>[3]</sup>

That which is purifies, cleanses and makes pure.

The word **Shodhana** is derived from the sanskrit root “**Shudh**”, which means purification or cleansing. The term indicates processes that purify a substance by removing unwanted materials and toxic components<sup>[4]</sup>

**DEFINATION**

“It is the process by which blemishes are separated from the substance by various processing like grinding with specific drugs”.<sup>[5]</sup> In the sense shodhana is indicated to eliminate visible and invisible blemishes and to induce certain qualities which are essential for the metabolism of the material in the living body, many time it said that shodana is done to make particle size minute and useful for marana procedure<sup>[6]</sup>

**Objectives of Shodhana<sup>[7]</sup>**

- Removal of physical and chemical impurities
- Reduction of toxicity
- Enhancement of therapeutic efficacy
- Reduction in particle size
- Making substance suitable for Marana

**Types of shodhana<sup>[8]</sup>**

Shodhana is classified into 2 group's i.e

- Samanya Shodhana
- Vishesha Shodhana
- » Samanya Shodhana<sup>[9]</sup> : It is generally applied for drugs which are come into one category like maharasa, uparasa, ratna, dhatu etc. The drugs of one group having some similar type of impurities so that with the help of samanya shodhana general impurities can be removed.

- » Vishesha Shodhana<sup>[10]</sup>

Each Substance of the group may have different type of impurities. These are uncommon impurities are particular to the substance, therefore special procedure and techniques are used for the removal of these impurities. This is called vishesha shodhana. Thus after samanya

Shodhana, Vishesha shodhana are performed to remove the impurities which cannot be removed by samanya Shodhana.

**Role of media in Shodhana**

In the method of Shodhana the drugs of mineral origin are subjected to grinding, heating, distilling etc. processes which intern removes the soluble, evaporable and washable impurities from these drugs. For this purpose these drugs are either treated with acidic, alkaline and neutral type vegetable extracts/liquids or with oily materials in the presence or absence of heat for specified period. In some cases only heat treatment is given in a specified apparatus so as to remove their volatile or thermostable impurities. Grinding in hot & cold condition is also done to reduce and disperse the particles of the materials and thus exposing maximum portion of the drug to the purifying material. By subjecting to different processes, the drugs are made homologous to the cells, their toxicity gets reduced and acceptability by the cells is increased.<sup>[11]</sup> The media used in the process of shodhana has an important role in breaking down or altering the chemical constituent. For example manashila is always found mixed with As<sub>2</sub>O<sub>3</sub>, which is a highly toxic substance churnodhaka (lime water) is generally used for manashila shodhana.<sup>[12]</sup> While arsenic (As<sub>2</sub>O<sub>3</sub>) dissolves readily in solutions of alkalis. So here churnodhaka acts to eradicate highly toxic As<sub>2</sub>O<sub>3</sub> from manashila. Various physicochemical changes occur depending upon the selection of the media during the shodhana such as reduction in particle size, variation in elemental composition of major elements and addition as well as deletion of minor components from the raw material.<sup>[13]</sup>

**Table 1: Examples of Medias used in shodhana.<sup>[14]</sup>**

Plant origin	Animal Origin	Mineral origin
Kashaya	Dhadhi	Jala
Swarasa	Ksheera	Drava
Ksheera	Madhu	Churnodaka
Taila	Mutra	
Kanji	Rakta	
Arka	Artava	
Madhya	Takra	

**Different metods of Shodana in Rasashastra**

1. Swedana
2. Mardana
3. Patana
4. Avapa/Dalana
5. Nirvapa
6. Galana
7. Prakshalana
8. Nimajjana
9. Bharjana
10. Vilayana
11. Bhavana
12. Achushana

13. Agni Shoshana

14. Nirjalikarana

**Shodana dravya varga<sup>[15]</sup>**

Liquid media which is used in samanya and vishesha shodana are included in these Vargas i.e.

- Sneha Varga eg: Taila, Gritha
- Amla Varga eg: Takra, Kanji, Nimbu, Amalaki
- Kshara Varga eg: Gomutra, Kulatha, Sarjikshara, Kadalikanda
- Katu Varga eg: Nirgundi, Bringa Raja, Haritaki
- Tikta Varga eg: Vasa, Swarnakshiri, sirisa
- Kashaya Varga eg: Kanchanara, Haritaki, Bibhitaki

**Sneha Varga<sup>[16]</sup>**

Sneha Dravya are mainly used in general purification. Dhatu patra are heated and dipped into this. In this process oil enters in the metal pores. The fat soluble impurities which are present in the metal are dissolved in the oil. Charakacharya says sneha dravyas is best for making hard substance into soft and some other context he says that with help of sneha dravya wood will become soft.

**Amla Varga<sup>[17]</sup>**

These are having mass breaking properties which helps in changing hard substance to soft, irritant properties of drugs helps in clearing the channels. It is having the properties of cleaning the slyminess.

**Kashara Varga<sup>[18]</sup>**

Kshara dravyas are having properties like alkali. They dissolve metals within or they have properties to soften the metal. Kshara contain lavana or katu rasa. Both these contain irritant and mass breaking properties. So with the help of shodhana procedure kshara absorbs liquid portion and oiliness of dravya taken for shodhana and makes it softer and brittle.

**Katu Varga<sup>[19]</sup>**

While describing effect of single use of katu rasa on the body, Acharya Charaka narrates that katu rasa stimulates the digestion, scrapes muscles, and opens the channels. With help of such qualities of katu rasa may show their effect on dravya and help in shodhana process.

**Tikta Varga<sup>[20]</sup>**

Charakacharya mentioned that tikta rasa is absorbent of moistures, causes coarseness in channel, taken away the strength, and produces emaciation. So we can say that with these actions tikta rasa can be helpful in purifying the metal or mineral i.e. Absorption of moisture.

**Kashaya Varga<sup>[21]</sup>**

Kashaya rasa having properties like lekhana, absorption, shoshana quality will be helpful in purification of rasa dravyas.

In Rasarnava it is given that during purification of metal kshara are used for eliminating external impurities. Amla Rasa Dravya are used to introduce prabhodhana in the metal and to eradicate thamo guna in metal visha dravya are used. Sneha dravya are used to soften the metal.<sup>[22]</sup>

**Changes during Shodhana Process****1. Physical changes**

- » Elimination of physical impurities eg: Kampillaka is separated from brick powder. Guggulu is separated from adulterants, Shilajathu is separated from insoluble physical impurities.<sup>[23]</sup>
- » Reduced Hardness: By repeated heating and quenching in liquid media metals/minerals will become soft. eg: Dhatu shodhana.<sup>[24]</sup>

- » Increase in Brittleness: By repeated heating and quenching in liquid media metals/minerals will become brittle. eg: Abraka shodhana.<sup>[25]</sup>
- » Reduction in particle size: After sodhana of metals/minerals will attain powder form .e.g.: Tankana shodhana.<sup>[26]</sup>

**2. Chemical Changes**

- » Elimination of chemical Impurities: During Shodhana of makshika, impurities like arsenic get eliminated by heating.<sup>[27]</sup>
- » Formation of chemical compounds: Makshika when fried, Sulphur is eliminated and Iron and copper part convert into oxide form.<sup>[28]</sup>
- » Changes into desired compound: During shodhana of tankana and kankshi water portion evaporated and desired chemical compound is formed.<sup>[29]</sup>

**3. Biological Changes**

- » The ultimate objective of these physio-chemical changes of the material is to increase its biological availability means to potentiate its biological efficacy.<sup>[30]</sup>
- » Reduction in particle size helps in absorption, smoothness leads to non-irritability and all chemical changes make the material body friendly like Shoditha Vatsanabha (Aconitum ferox purified in cow's urine) is converted into cardiac stimulant. Seeds of kupilu (Strichnos nuxvomica) purified in cow's milk show CNS depressant activity.<sup>[31]</sup>

**Importance of Shodhana**

Without Shodhana samskara, Rasasastra is incomplete as no medicament can be prepared without the prior removal of impurities. That is why sodhana of every substance in rasasastra is described at the very beginning. Even common substance like alum when administered in impure form give rise to several disease and upon the administration of the same in purified form, they produce marvellous therapeutic results. Shodhana is an important and inevitable technique in the field of Indian pharmaceuticals which causes.

- 1) Purification of the drug.
- 2) Detox cation of the toxic drug.
- 3) Potentiating of properties of the drug.
- 4) Alteration of properties of the drug.
- 5) Induction of brittleness in the drug.
- 6) Disintegration of the drug to provide its finer particles so that the drug may be made suitable for further procedures of other special techniques viz jarana, marana and satwapatana etc. to obtain product suitable for internal use.

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