



# Research in *Ayurveda*: Need, Scope & Utility

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**Abstract:** Today, the most talked about topic in Ayurveda system of medicine is the Research and its need, scope and utility. As the Ayurveda system of medicine has a divine origin deeply associated with the ancient most source of knowledge i.e. the *Veda*, it is generally accepted that there is no lacuna in this science as it has thrived since the existence of man and still deeply intertwined with the Indian Philosophy and culture. However, with the scientific developments and refinement of the old theories, it becomes mandatory to have a scientific insight into this ancient but most followed holistic system of medicine. This is possible through the introduction of the research practice in Ayurveda system of medicine. The research in Ayurveda aims to develop a scientific view of the concepts and theories laid down in the classics with the necessary amendments made wherever desired keeping the basic principles intact. Thus, the challenge is to make Ayurveda in line with the contemporary progressive sciences through the systematic research activity.

**Keywords:** Research, Veda, Philosophy, Basic Principles, Scientific

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## 1. Introduction

Necessity is the mother of invention. This quest of search something new or reinvent the known that is for the betterment of mankind is termed as Research. The research phenomenon is not new to the *Ayurveda* science of life. The Research has been as old as the human tradition. The *Ayurveda* classical texts are full of the direct and indirect references suggesting of research activity. The words synonymous with the research in *Ayurveda* classics are *anusandhana*, *anaveshana*, *gaveshana*, *pariksha et al.* [1] These words in the ancient Indian Sanskrit literature are of great significance as they denote the proximity of the research activity and the society. The word *gaveshana* literally means the search for the missing cows. This implies the search for the missing links between the cause and the effect, the universal principle postulated and discussed in detail in the Indian Philosophical schools. *Ayurveda* is in fact one step ahead as it stresses upon the *pariksha* (examination) as the synonym for research. [2] The examination is the key word of discussion mentioned in the *Ayurveda* classics as the definite road to the attainment of knowledge. The research methodology of the classics and the contemporary methods of research differ at various levels which needs to be

pondered over and the acceptable solution be searched, it is however certain beyond doubt that there is a lot of scope of research in *Ayurveda* which is the need of the hour. The whole world is looking towards the alternative systems of medicine as a possible remedy to ever-increasing menace of the resistance against the antibiotics used non – judiciously in the medical practice today. This expectation of the ailing world can be met through a sincere and dedicated research activity in the traditional and alternate systems of medicine like the *Ayurveda*. Thus this paper presents an in-depth review on the research in *Ayurveda* with special reference to the need, utility and significance.

## 2. Research in *Ayurveda*—A Worthy or Futile Exercise

There has been a big debate amongst the *Ayurveda* fraternity regarding the need and utility of research in *Ayurveda*. Some of the staunch followers of the classical texts of *Ayurveda* affirm that there is no need of research in *Ayurveda* as the science of life, *Ayurveda* is a complete science promulgated by the seers of yore having the divine powers which make their deliberations beyond doubt. These seers of yore have envisioned *Ayurveda* through their

spiritual resolve and have narrated the science for the posterity. The *apta vakya* (authoritative statements) made by these seers should be practiced in its letter in spirit.

The question of research arises when there is a doubt regarding the veracity of a statement. But the *Ayurveda* science, an offshoot of the ancient Indian source of knowledge known as *Veda* is unquestionable and thus there is no scope of research in *Ayurveda*. Also, it has been proved time and again that the basic principles of *Ayurveda* are purely scientific and have remained unchanged through the generations. A science having such a strong foundation cannot be challenged just like the classical *Vedas*. Thus, this group of scholars vehemently disapproves of any questioning of the *Ayurveda* tenets and therefore believes that the *Ayurveda* is a wholesome science per se and thus there is no scope of research in *Ayurveda*.

The conduction of research in *Ayurveda* is a difficult task as it believes in the individual uniqueness. *Charaka* suggests that every individual is unique and thus a physician should examine each and every person as a separate unit making it practically unfeasible to conduct research in *Ayurveda* as the latter aims at the unity/standardization among a group of individuals. Contemporary research is mainly aimed at developing standards valid for a group with some exceptions, if any. Thus, it is apparent that a group of *Ayurveda* scholars consider the research activity in *Ayurveda* as a futile exercise.

However, there is a majority group which strongly supports the conduction of research in *Ayurveda*. With the growing demand and globalization of the *Ayurveda* system of medicine, it has become an essential and urgent need to bring *Ayurveda* into the mainstream progressive sciences. The progressive sciences undergo continuous rectification and modification in tandem with the changing scenario of the nature and the lifestyles. The research in *Ayurveda* becomes essential as the classical texts, the guiding principles were written centuries before. A lot has changed since then which mandates the modification and renewal of the same on scientific parameters. Even the *Ayurveda* classics approve of such changes in accordance with the changing times. Some of the instances of the support of research in *Ayurveda* classics are mentioned below-

### 2.1. Literary Research

The formation of the presently available major classics of *Ayurveda* system of medicine namely the *Charaka Samhita*, *Sushruta Samhita* & the *Ashtanga Hridayam* is a quintessential example of the conduction and approval of research. The need of the ailing humanity propelled the seers to search for the possible remedy and thus started the propagation of *Ayurveda* knowledge. [3] The *Charaka Samhita* was formed in four phases namely the narrator, first author, redactor and then the completion of the text. The narrator of the presently available *Charaka Samhita* is the seer named *Punarvasu Atreya* who preached the *Ayurveda* knowledge to his six disciples. This narration was transformed into a text by the most intelligent of disciples namely *Agnivesha* and the work done by him is called as the

*Agnivesha Tantra*. This is again very significant as the *tantra* is the first stage of any literary composition characterized by the description in a very concise form having a capacity to be expanded and render a person to draw a number of meanings. [4] The *Agnivesha tantra* has been explained in the form of *Samhita* by the seer named *Charaka*. Thus, this state of transition renders the name *Charaka Samhita* having an elaborate description of the *tantra*. Now, the *Charaka Samhita* having 120 chapters, due to reasons not known, some chapters of the *Charaka Samhita* went missing in the due course of time. The person named *Dridhbala* took this task of restoring the glory of the *Charaka Samhita* by adding the missing chapters with the help of available books. [5] So, the presently available *Charaka Samhita* having 120 chapters is attributed to the efforts of these revered people.

Therefore, the formation of the available *Charaka Samhita* is in fact a literary research as the aim of each of the seer involved in a particular stratum was to make the subject clearer and in tandem with the demand of the time. The methodology adopted by the *Dridhbala* is the *Sheela* (Collective) and the *Unchh* (Selective) methodology. [6] These collective and selective methodologies are truly in scientific terms and used in the contemporary era as well.

Similarly, the presently available *Sushruta Samhita* has been a result of the efforts of the (1) *Divodosa Dhanwantari* as the narrator (*upadeshta*) of the *Sushruta Samhita*, (2) *Vridhdha Sushruta* as the author of the *Sushruta Tantra* (3) *Laghu Sushruta* is the redactor of the *Sushruta Tantra* and the *tantra* is transformed into a *Samhita*. (4) *Nagarjuna* is attributed to the redaction of the *Sushruta Samhita* and (5) *Chandrata* (*Pathshuddhikarta*) i.e. reforms the text into present form. [7] These strata of formation again symbolize the literary advancements and thus demonstrate the literary research.

The *Ashtanga Samgraha*, one of the most valued texts in *Ayurveda* literature is the best example of literary research as the author *Vagbhata* himself admits that he has compiled the text to make the text up-to-date. [8] This is a very significant point and is the motto of conduction of research. With the passage of time, the socioeconomic conditions change and thus the medical systems also undergo a reform. This is evident with a simple finding that the *Charaka Samhita* contains a lot of deliberations on the *atman* (soul) which are conspicuously curtailed in the *Ashtanga Hridayam* indicating a big shift in the demand of society. Therefore the formation of these classical texts set an example of literary research themselves.

### 2.2. Drug Research

The drug research deals with the identification of the new drugs with their detailed analysis with regards to its attributes, qualities, action, dosage and safety issues, if any. Thus, it is a comprehensive study of a drug. In *Ayurveda* system of medicine, the drug is termed as the instrumental cause of the desired effect. [9] The points of the drug research have been explained in the *Vimana Sthana* of the *Charaka Samhita* and play a pivotal role in a comprehensive research of a drug. [10] These points of examination of a drug are-

### 2.2.1. Nature (Prakriti) of the Drug

Based on the constitution of the five basic elements namely the *panchamahabhuta* the nature of the drug is formed. Some may be hot while the others may be cold in potency.

### 2.2.2. Quality (Guna) of the Drug

i.e. the cause of its selection or rejection.

### 2.2.3. Special Effect (Prabhava) of the Drug

The concept of *prabhava* has been explained in the first chapter of the *Vimana Sthana* itself under the heading of the *vikriti vishama samaveta*. Some drugs act as per their qualities while others deviate or demonstrate some special effect due to the heterogeneous combination of the five basic elements, *panchamahabhuta*. Although there has to be a cause accountable for the special effect, the same needs to be searched.

### 2.2.4. Place of Origin and Growth (Asmin Deshe Jatam)

The *Charaka Samhita* and the *Vimana Sthana* explains vividly the harmony of the macrocosm (universe) with the macrocosm (man). The *desha* or a region (habitat) influences the nature and action of a drug. Based on the climatic and soil condition, the drug and its action vary. The drugs from the Himalayas are cool in potency while the drugs hailing from the desert are hot in potency. Even the same species of a drug differs in quality or action according to the habitat.

### 2.2.5. Time and Mode of Collection (Asmin Ritau Evam Grihitam)

The *kala* or the time is an unavoidable factor in *Ayurveda*. The time is the factor of production and destruction. The different parts of a plant are collected in special seasons based on their potencies.

### 2.2.6. Mode of Storage and Preservation (Nihitam)

To ensure throughout the year availability and the best maintenance of the potency (which is supposed to decrease continuously) it is very important to take care of the method of storage and preservation. The Good storage ensures the long life of a drug and is economically feasible.

### 2.2.7. Transformation or Processing (Upaskrutam)

The raw drug needs a proper transformation to be converted into a usable form with an increased potency. This process is termed as *sanskara* in *Ayurveda* parlance. The GMP (Good manufacturing practice) is the key to the efficacy of a medication.

### 2.2.8. Dosage of the Drug (Anaya Ca Matraya Yuktam)

The dose of the drug depends on the condition of the disease and the status of the patient. The dosage also depends on the type of action of the drug whether the purification (*shodhana*) or pacification (*shamana*). A proper and desired dose of a poison can save one's life (as a drug) while even an elixir when consumed in an inappropriate dose can take away the life (as a poison).

Therefore, it is clear that the *Charaka Samhita* mentions a

systematic research methodology for the drug/medicine.

Likewise, there is a clear indication of inclusion of new drugs hitherto absent from the list of the 500 drugs mentioned by *Charaka* in the chapter *Shadvirechana shataashritiyam adhyaya* or the exclusion of mentioned drugs, if it seems necessary to do so. [11] This is a significant postulate as it indirectly mentions the need of the research and examination in the arena of the drugs, negating the view of some of the scholars who vehemently oppose the prospect of research in the *Ayurveda* system of medicine.

*Vagbhata*, the author of the *Ashtanga Sangraha & Hridayam* has proposed the indication of the single drug for diseases which is again not possible sans the research activity. [12] The single drug for an ailment stands valid even today and thus cannot be termed as a mere notion.

In the current scenario, there is a growing need to search for the newer drugs available in the contemporary environment hitherto not known.

## 2.3. Clinical Research

The clinical research is the crux of any system of medicine. The classical texts of *Ayurveda* are full of such findings in terms of the clinical research. The clinical research includes the diagnostics and therapeutics. *Ayurveda* mentions a number of examinations used for the diagnosis of the diseases and the methodology for their treatment. The sequential treatment principle is the key to the clinical treatment in *Ayurveda*. The basic principles of the treatment include mainly the *langhana* (emaciation therapy) and *brimhana* (nourishing therapy). [13] The other protocol of the treatment includes the *shodhana* (purification) and the *shaman* (pacification) therapy. These therapies have been tested upon the animals as the protocol of the modern research. The various indirect references have been mentioned regarding the testing of the suspicious food items on the animals and birds.

However, with the ever-increasing resistance to the antibiotics, it is mandatory to search for the alternate therapies for the menace of the diseases. The basic principles of *Ayurveda* like the *dosha*, *agni*, *dushya et. al.* remain unaltered and should be utilized for the search for the treatments. Thus, it is the coveted research in the current scenario with the biggest challenge being the preservation of the *Ayurveda* principles of treatment while searching for the new treatment.

From the above deliberations, it becomes clear that there is a tremendous demand for the research activity in *Ayurveda* system of medicine. For the good of the humanity and the need of the hour, it is essential to pursue a scientific and rational approach towards the development of the *Ayurveda* system of medicine.

## 3. Tools (Materials and Methods) for the Research in Ayurveda

The tools of research in *Ayurveda* are mainly three-fold,

described in the *Nyaya* school of Indian Philosophy approved in *Ayurveda* as the *trividhapariksha*. [14] These three tools are the *Pratyaksa* (direct observation), *Anumana* (inference) and the *Aptopadesha* (authoritative statement). With the use of the modern technology, these three methods of examination need to be utilized to optimum to produce the desired results.

The five fold statement (*Pancavayava Vakya*) for the *pararthanumana* (demonstrative inference), is an excellent model of research in *Ayurveda* and the contemporary sciences. These five points of examination are-[15]

- a Formation of assumptions/hypothesis (*Pratijna*) – The statement of the research problem. The hypothesis is prepared which needs to be studied on a scientific protocol in the course of research activity.
- b Materials and Methods (*Hetu*) – The research plan/design that describes the materials and methods that would suffice the research activity. According to the hypothesis, the appropriate materials and methods are selected.
- c Experimentation and illustration (*Udaharana*) – The demonstrations and experimental study are undertaken at this stage that gives us the scientific data which is utilized at the later stage of the research activity.
- d Discussion (*Upanaya*) – This is very important stage which includes the interpretation of the data collected through the experimentation and demonstrations. The possible relation between the cause and effect is drawn logically. The discussion of the possible relation between the cause and effect should be free from the fallacies of reasoning mentioned in the *Nyaya* School as *Hetvabhasa*. [16] These fallacies vitiate the proper reasoning and thus pose a threat to the drawing of valid assertions and conclusions.
- e Conclusion (*Nigamana*) – The final word/conclusion deals with the approval or the rejection of the hypothesis and paves the way for planning the future actions.

Thus, with these tools of research in *Ayurveda*, the modern scientific instruments and methods like the use of chromatography, pharmacological and laboratory tests the much needed scientific research in the *Ayurveda* system of medicine is possible.

## 4. Conclusion

From the above discussion, it is apparent that there is a need of research in *Ayurveda* to help the ailing population with an alternate remedy against the extant indiscriminate and spurious use of the poisonous antibiotics. Also, there is a lot of scope of research in *Ayurveda* including the fundamental, literary, clinical and the therapeutics. Keeping

the *Ayurveda* fundamentals intact, it is mandatory and obligatory to pursue scientific research in this probably the oldest system of medicine still practiced and followed by millions across the globe.

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