# The Ancient Indian Knowledge System and the Medical Sciences

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## Abstract

The article discusses ancient Indian ideas and thought processes that are related to modern medicine and health. Ethnopharmacological Importance Medicinal plants have been used by humans for centuries to treat their health conditions, making them one of the oldest known remedies. They have a significant role in the formulation of indigenous systems of medicine in various countries. Furthermore, they are now being incorporated into products such as herbal teas, health supplements, and nutraceuticals. There has been a global resurgence of interest in medicinal plants, including in India, which has led to extensive research and activities in this field. People are turning to Indian culture and attempting to integrate it into their daily lives because ancient Indian medical sciences are considered superior to modern allopathic treatments. Wearable health monitoring is the focus of numerous ongoing research projects, enabling healthcare monitoring from anywhere. Ancient India had advanced clinical information systems in place. The archaeological evidence from Mohenjo-daro and Harappa reveals the high level of civilization in matters of sanitation and hygiene. A study of the Vedas indicates that all four texts contain numerous references to various aspects of medicine. The Atharva Veda, in particular, is considered an encyclopedia of medicine. Additionally, Ayurveda, known as the science of life, is regarded as an Upa Veda or subsidiary subject of the Atharva Veda. In this article, we provide glimpses of the medical science that prevailed in ancient India. The proposed article aims to justify

> the concepts of ancient Indian medical sciences.

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## Introduction

Ayurveda is an ancient Indian medical science with its origins traced back to the Vedas, the oldest available classics in the world. The Vedas are ancient books of knowledge and science from India. Ayurveda is a holistic healing science that combines two words: Ayu (life) and Veda (knowledge). In Ayurveda, three crucial factors are Indian medical science, medicinal herbs/plants, and nadi vigyan (pulse diagnosis) [1]. When we visit a doctor, they use a stethoscope to examine us, check our tongue and eyes, and sometimes perform nadi pariksha, which is also known as E-HEALTH ANALYSIS [2]. Nadi pariksha is an essential aspect of medical science. To understand the concepts of nadi pariksha (pulse diagnosis), we must first grasp the idea of srotas, sira, dhamani, and nadi. These are channels within the body responsible for transporting substances. It is an admirable fact that the ancient sage Maharishi Sushurut managed to identify even the minutest channels in the body, which were challenging to observe with the naked eye. The energy flowing through these channels (nadi) carries information about the health of all connected aspects, including organ channels (srotas), tissues (dhatus), organs, their health, and regeneration within the blood. During nadi pariksha, this energy provides insights into our body's metabolism, conscious and subconscious mind, attitudes, experiences (samskaras), and patterns (vasanas) that we have lived through in the past [3]. When an allopathic doctor checks a patient's wrist, they typically only assess the rhythm of the pulse. However, nadi pariksha allows for more detailed observations. In traditional nadi pariksha, three fingers (index, middle, and ring finger) are placed just below the wrist on the radial artery to observe over 28 different pulse attributes. This provides a comprehensive understanding of the patient's health. The actions of the mind and the five sense organs produce subtle vibrations in the cells, which are carried by the blood to various parts of the body. These vibrations can lead to imbalances in the energies stored in the cell memories, resulting in symptoms such as diabetes, hypertension, hyperthyroidism, cancer, and other physiological symptoms. By identifying the cause and effects of one's actions through nadi pariksha, suitable therapies can be employed to address the underlying causes and effects [1].

## The Vedas

he earliest sources of our knowledge of Indian philosophy and medicine are the four Vedas, sacred books of knowledge dating from the period of 1500 to 800 B.C. Ayurveda is considered to be the Upa-veda or supplementary subject of the Atharva Veda. An analysis of the material in the Vedas reveals that all four Vedas contain numerous references to various aspects of medicine. Gods such as Rudra, Agni, Varuna, Indra, and Maruthi were revered as celestial physicians during that time. Therefore, during the time of the Atharva Veda, there were physicians and an elaborate pharmacopoeia for

treating diseases. The praise of the Atharwan as the physician par excellence, superior to all medicines prescribed by other physicians, implies the existence of two systems of medicine side by side:

1. the system of charms prescribed by the Atharwan (priest physician), and
2. the system of drugs prescribed by ordinary medical practitioners[4].

The division of Dhamanis, Siras, and Snayus seems to have been based on their relative thickness, with the thicker canals called Dhamanis, the finer ones called Siras, and the even finer ones called Snayus. The flow of certain fluids in the body is described as "Who stored in him floods moving in all diverse directions and formed to flow in rivers pink, rosy red, and coppery dark running in all ways in a man, upward and downward." There appears to have been a rudimentary understanding of the close relationship between the heart and the brain. The Atharva Veda mentions five classes of diseases:

1. diseases produced by wind, water, and fire, later classified in Ayurveda as diseases related to the three Doshas: Vata, Pitta, and Kapha;
2. diseases caused by possession by demons and evil spirits;
3. diseases due to worms;
4. diseases due to sorcery (the use of magic powers derived from evil spirits); and
5. hereditary diseases (Kshetraja) [3].

The Vedas provide detailed explanations of Krimi (organisms), classifying them into Drishya (macro) and Adrishya (micro), existing in water, earth, sky, and houses. This implies that the Atharvanic people had knowledge of ultraviolet rays present in sunlight. Additionally, it is stated that pathogenic bacteria mostly thrive in darkness and perish at sunrise [2].

Since its inception, the Indian Council of Medical Research (ICMR) has actively engaged in research on indigenous drugs. The Council is well-known for its support of various research programs focused on medicinal plants and traditional medicines, dating back to 1929 [DCC, CDL]. Given that medicinal plants are valuable and widely accepted sources of traditional and modern medicines, phytopharmaceuticals, nutraceuticals, cosmetics, and more, scientific research is conducted not only on the medicinal plants considered most promising by researchers, the drug industry, or traditional healthcare practitioners, but also on thousands of other investigated and uninvestigated medicinal plants that have the potential to provide therapeutic agents in areas where modern medicine offers limited options. The ICMR has taken numerous initiatives thus far in the research of medicinal plants and traditional medicines [3].

## Chronology of Ancient Indian Medical Knowledge

The earliest corpus of medical works is embodied in the *Atharvaveda*. The Atharvaveda contains sections that discuss longevity, treatment of ailments, cures for specific diseases, eradication of germs, antidotes to poison, prudent food habits, and a healthy lifestyle. As exemplified in Patanjali's *Yoga Sutras* (fountainhead), which emphasize good thoughts, good works, *asanas* (yoga poses), *pranayama* (control of the breathing process), and meditation to attain a healthy body

and mind, as well as *Samadhi* (meditative contemplation to attain higher consciousness). Philosophical notions coexisted with medical knowledge without conflict. The roots of *Ayurveda* can be traced back to the Atharvaveda, which views ill-health as either resulting from an unwholesome lifestyle or as the fruits of deeds committed (*Karmaphala*).

Ayurveda views human health in terms of three *doshas*, which are fundamental energies or governing principles of the body, comprising the five elements: *Vata* (air - *Vayu* and space/ether - *Aakash*), *Pitta* (fire - *Agni*), and *Kapha* (earth - *Prithvi* and water - *Jala*). An imbalance in these doshas leads to ill-health, and Ayurveda seeks to restore them to their ideal state. According to Ayurveda, the universe is composed of the *Pancha Mahabhootas* (five great elements), and the doshas control physiological functions. The human body is described as comprising *saptadhatus* (seven fundamental principles/tissues): *Rasa* (tissue fluids), *Rakta* (blood), *Mamsa* (muscle), *Meda* (fat), *Asthi* (bones), *Majja* (marrow), and *Shukra* (reproductive tissue). Praying to deities for healing and good health was a common practice in northern India, where Sheetala Mata or Ma Durga was worshipped, and in southern India, where Mariamman was worshipped. The iconography of Sheetala Mata depicts her carrying a broom and pots, symbolizing the importance of cleanliness. Water was stored in bronze or copper pots due to their antiseptic properties, and herbal remedies such as turmeric and neem leaves were utilized for their healing powers. The earliest application of systematic medicine originated in India, and the Sus'ruta and Charaka Samhitas are considered the oldest sources of medical knowledge [4].

In recent decades, there has been a significant adoption of Eastern concepts in the field of mental health. This trend has prompted the author to delve into ancient Indian literature [5].

Synonyms and Varieties of Jwara (Fever)

| S. No. | Varieties of Fever | Causes |
|---|---|---|
| 1 | Abhraja | Due to clouds (Kaphaja Jwara) |
| 2 | Vataja | Due to Vitiation of Vata |
| 3 | Shushma | Due to emaciation |
| 4 | Parusha | Due to rukshatwa (dryness) in the skin |
| 5 | Anga | In Limbs |
| 6 | Angabhed | Due to body pains |
| 7 | Sheeta | Due to cold |
| 8 | Roor | Due to Paittik |
| 9 | Trithiyak | Fever manifested on the 3rd day |
| 10 | Vitrithiyak | Fever manifested on the 4th day |
| 11 | Sadandi | Continuous |
| 12 | Sharad | Due to specific effects of autumn season |
| 13 | Varshik | Due to specific effects of rainy season |
| 14 | Grishma | Due to specific effects of summer season |
| 15 | Vishwa Sharad | Spreading type diseases (Malaria due to specific effects of Autumn season) |
| 16 | Aruna | Fever with red-colored pustules, i.e., Masurika (smallpox) |
| 17 | Babhru | Yellow fever |
| 18 | Vanya | Due to forestry |
| 19 | Chyavan | Fever with excessive sweating |
| 20 | Nodan | Intermittent |
| 21 | Avritha | Vishamajwar (Typhoid) |
| 22 | Ghrishnu | Due to injuries or wounds |
| 23 | Hayan | Due to indigestion of Vreehi (a kind of rice) |

## Origin of Indian Medicine

Ancient Indians made significant advancements in medicine, as evidenced by the notable works of Susruta, Charaka, and others. In addition to authoritative texts, ancient India employed an intriguing pedagogical approach, passing down wisdom, morals, and knowledge through stories [4].

## Attributes of Mind According to Ancient Medical System

Based on various sources, the attributes of the mind are as follows: (i) conscious-unconsciousness, (ii) self-identity, (iii) field-like properties, (iv) energy or power, and (v) immaterial nature through its association with the soul in the physical body. For our purposes, these can be considered as tentative hypotheses, each with corroborative evidence found in modern scientific literature. Here are a few examples [5].

## Mind-Body Relationship

According to Ayurveda, the following concepts apply: (i) The mind, with its creative potential, was the first entity to come into existence, and everything else was subsequently created. (ii) The physical body is merely a gross, material replica or "image" of the mind, forming the basis of the classical Indian doctrine of "mind-over-matter." (iii) The mind and body exist on an immaterial-material continuum and mutually influence each other.

Thus, the present-day concept of psychosomatic medicine is implied in Ayurvedic teachings, which suggest that:

a. Every disease has multiple etiological factors.
b. Every physical disease has one or more psychological factors as etiological agents.
c. The psychological etiological factors include fear, anger, grief, greed, pride, jealousy, etc. It is interesting to note that greed and pride are considered as factors contributing to illness. According to this thesis, none of us are free from susceptibility to illnesses.
d. Certain qualities of living related to values, attitudes, and behavior promote health, including courage, righteous living, and the ability to control one's behavior to ensure righteous living. According to Indian scriptures, "righteousness" encompasses attitudes and behaviors that maximize long-term benefit for all life [5].

It is interesting to observe that the components of righteous living are the opposite of qualities mentioned earlier as fear, greed, jealousy, anger, grief, pride, etc. [6].

## Dilemma for Spiritual Practices and Mental Health

In recent times, there has been a growing trend, both within the mental health profession and among the general population, towards adopting spiritual practices for various purposes, including stress management and healing of illnesses. These practices encompass a range of activities such as *yogasanas*, *pranayama*, meditation, or combinations thereof, often marketed under different proprietary names. Extensive research has been conducted on these practices, and the results support their beneficial effects on overall well-being.

However, within the ancient Indian scriptures, there are consistent warnings regarding the utilization of spiritual practices for material or worldly objectives:

i. These practices are solely intended for spiritual purposes, such as achieving "god-realization" and striving for purity.
ii. They should not be employed for worldly purposes, such as evading or alleviating illnesses or mitigating the troubles associated with daily life. Examples of these admonitions can be found in texts like the *Shiva Purana*, where Lord Shiva, and the *Yoga Vashishtha*, where Sage Vashishtha, express their disapproval. In one particular instance, Lord Shiva even goes as far as punishing a devotee for exploiting spiritual practices for personal gains [7].

The recurring message is as follows: (i) Spiritual practice is intended for the ultimate goal of human life, transcending material existence. (ii) At the worldly level, afflictions and illnesses can and should be addressed through various available

material means. (iii) A state of serenity, among other things, naturally arises as a by-product of spiritual practice. However, that state itself should not be the objective. In other words, the pursuit of so-called "peace of mind" or similar aims should not become the primary objectives of spiritual practice. This presents a paradox [8].

## Archeological Record of Medical Practice

Evidence of early medical practices in India can be traced through archaeological discoveries. For instance, a tooth dating back 9000 years was found in Baluchistan, exhibiting signs of drilling to remove decayed dental tissue. Additionally, several skulls were unearthed from the Mehrgarh and Harappa Cemeteries, dating back to 2300 BCE, showing evidence of trepanation and bone healing. Another discovery near Baluchistan, in the Burnt City dating to 2800 BCE, involved a skeleton with a bitumen prosthetic eye found in a grave [4].

## Spread Of Indian Knowledge

In ancient Greece, we find evidence of travelers such as Pythagoras and Democritus who journeyed to India in search of knowledge, which subsequently influenced their societies. For instance, Hippocrates (460-370 BCE), a student of Democritus, proposed a model for understanding the human condition based on the elements of air, fire, earth, and water, as well as the qualities of hot, dry, cold, and wet. This model bears similarities to the Ayurvedic dosha model. Given the active presence of Buddhist missionaries in the region and the expansive Selucid empire that spanned from India to Turkey, it is not surprising that knowledge from India disseminated to these areas. The Roman trade, as depicted in the Periplus of the Erythrean Sea, reveals that Indian medicines, herbs, and spices were also part of the trade network. In fact, Dioscorides compiled a 5-volume Materia Medica that extensively featured Indian herbs [9].

Research in the field of traditional medicine and medicinal plants took a new direction when the Indian Council of Medical Research (ICMR) introduced the Composite Drug Research Scheme (CDRS). This initiative aimed to revitalize research on Indian medicinal plants by establishing nine main research circuits in different geographical locations across the country. Each circuit consisted of five units, which were as follows:

1. Pharmacognosy unit responsible for the collection, identification, and authentication of plants, describing their morphological and microscopic features.
2. Chemistry unit tasked with conducting phytochemical studies.
3. Pharmacology unit dedicated to studying the pharmacological activity of extracts and isolated and characterized active principles, particularly focusing on the therapeutic claims made.
4. Clinical unit comprising Ayurvedic clinicians to recommend therapeutic regimens based on the traditional Ayurvedic system.
5. Clinical unit involving modern medicine practitioners for clinical validation.

The CDRS achieved significant success within a relatively short period of five and a half years in the areas of

pharmacognostic, pharmacological, and phytochemical studies. However, the same level of accomplishment could not be attributed to the clinical studies. Subsequently, with the establishment of several independent councils through the branching of the Central Council for Research in Indian Medicine and Homeopathy (CCRHIM), such as the Central Council of Research of Ayurveda and Siddha (CCRAS), the Central Council for Research in Unani Medicine (CCRUM), and the Central Council for Research in Yoga and Naturopathy (CCRYN), these councils undertook research on various aspects of traditional medicine. In contrast, ICMR took a more subdued approach in this field for nearly fifteen years. Nevertheless, the Council did not completely lose its fundamental interest in the scientific evaluation of ancient systems of medicine and continued to support open-ended research in this area [10].

## Conclusion

This paper provides an overview of the Nadi-E-Health Analysis Element and highlights recent technological advancements in the field of ancient Indian medicine. It also attempts to bridge the gap between modern medical technology and ancient medicine, particularly in the context of Ayurvedic Swayam Nadi Pariksha, which introduces a new concept of monitoring. The history of Indian medical systems reveals significant contributions made by numerous physicians and surgeons throughout the ages. Additionally, we have emphasized the antiquity of Indian medical systems and their impact on ancient, medieval, and modern medicine.

For future endeavors, it is recommended to review existing knowledge on the mind and related phenomena from religious, spiritual, and other sources, and incorporate them into standard textbooks, even if presented as alternate viewpoints. This would provide an opportunity for interested researchers to further study these topics, rather than keeping professionals unaware of their existence.

These requirements shed light on yet another paradox: the tendency to neglect valuable resources available within our own culture, or the paradox of misplaced priorities.

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