

Life Sciences (1) Ayurveda for Life, Health and Well-being – Part 1

LIFE SCIENCES (1)

Ayurveda for Life, Health and Well-being: A Survey

WHAT IS AYURVEDA?

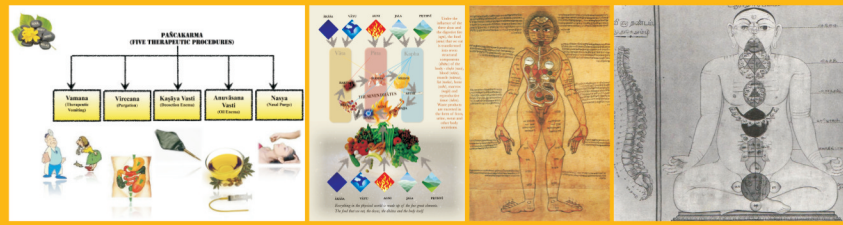
Definition of Ayurveda

Ayurveda is made up of two words — *ayus* meaning life and *veda* meaning knowledge. Ayurveda is thus knowledge of life or Life Science. A classical text defines Ayurveda as the knowledge that describes the wholesome (*hitam*), unwholesome (*ahitam*), happy (*sukham*) and unhappy (*asukham*) life as well as that which informs what is wholesome and unwholesome for life and longevity.

We can see from the above definition that the goal of Ayurveda is to promote both individual and social well-being at all levels of experience. Ayurveda aims to establish the highest level of health that a human being is capable of achieving and its scope is not restricted to curing diseases. Health is a state of physiological, psychological and spiritual well-being.

What does Ayurveda have in common with the modern definition of health laid down by the WHO?

Several thousands of years ago, the tradition of Ayurveda anticipated the most modern definition of health that has been trumpeted by the World Health Organization: 'Health is a state of complete physical, mental and social well-being and not merely absence of disease or infirmity.' Ayurveda also adds the spiritual dimension to health and points out that the human being is three-dimensional and needs to be healthy in body, mind and self. Health is a tool to achieve the four-fold goal of life: pursuit of spiritual and material well-being through resources obtained by righteous activity — *dharma*, *artha*, *kāma* and *mokṣa*.



Ayurveda emphasizes that individual well-being should not come into conflict with social well-being. A happy life is that which achieves individual well-being, whereas a wholesome life is that which is conducive to social well-being. These concepts are currently in application and we have countries projecting their personal and national well-being indices, which match exactly the Ayurvedic notion of a happy and wholesome life.

Integrative approach to healthcare

Ayurveda is perhaps the earliest form of Integrative Medicine practised by humanity.

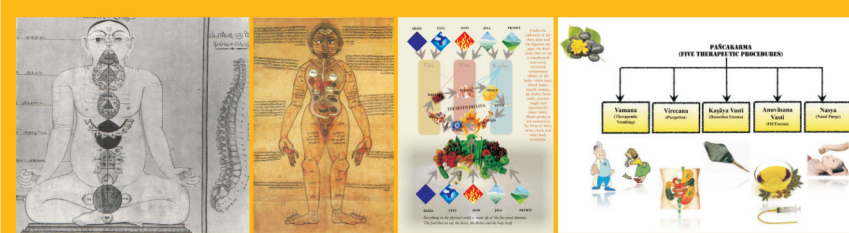
In what way does Ayurveda conform to the concept of integrative medicine?

The definition of Ayurveda is in tune with modern notions of Integrative Medicine. Integrative Medicine attempts to heal the body, mind and self at the same time or treats the human being as a complete whole. Integrative Medicine combines mainstream medical therapies and complementary and alternative medical therapies for which there is some high-quality scientific evidence of safety and effectiveness.

Ayurveda states that human life rests on the tripod of the body, mind and self. Ayurvedic texts also advise that there are multiple approaches to healing that are prevalent in the world and that we must examine and integrate the most effective methods to make a complete system of healing.

Balance of inner environment and personalized medicine

Ayurveda defines health as a dynamic balance of the internal environment that positively impacts the sense organs, mind and the self. Just like the sun, the moon and the wind maintain the balance of the external environment, the body maintains itself by balancing anabolic (building up) and catabolic (breaking down) activities by self-regulation. Each individual is unique and has a specific mental and physical constitution,



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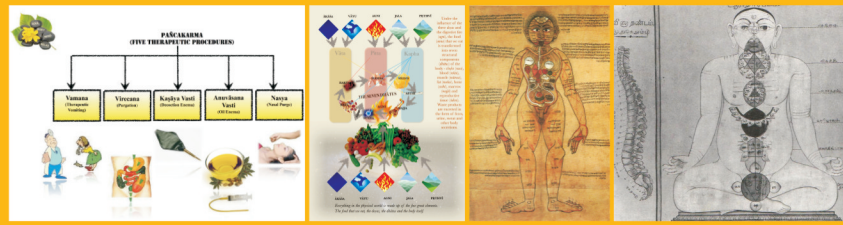
which defines the vulnerability to disease and the scope for achieving higher levels of health. Ayurveda has also been at the forefront of advocating an approach to personalized medicine from historical times. Advances in human genetics and medical genetics have heralded the emergence of a personalized approach to medicine today that tailors medical intervention to suit individual needs.

Harmony with the external environment

Ayurveda points out that the balance of the inner environment can be maintained only by establishing harmony with the external environment. Ayurveda proclaims that the human being is an epitome of the universe. The microcosm is a miniature representation of the macrocosm and the human being is made up of the same elements that make up nature. Thus it is that Ayurveda developed into an ecology-conscious system of healthcare. For the people of a locality, the plants growing around them are the most suited. Each individual has to carve a lifestyle that considers the geographical region as well as the changing seasons.

THE PRINCIPLES OF AYURVEDIC HEALING

Ayurveda deals with both preventive and curative medicine. Preventive medicine is centred on the theme of cultivating a lifestyle that is most suited to one's physical and mental constitution as well as the geographical and climatic conditions. It also includes detoxification and rejuvenating programmes to enhance the strength and immunity of the individual. Ayurveda prescribes guidelines for developing a daily regimen that has to be dynamically modified according to the seasons. Every individual has to work out a diet plan based on constitution, activity and the state of the digestive system. Not only should the diet be personalized to the needs of each individual, but it should also be modified according to the external environmental conditions.

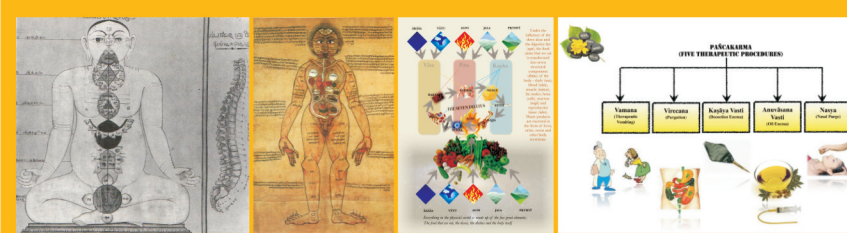


The five elements in nature make up the human body

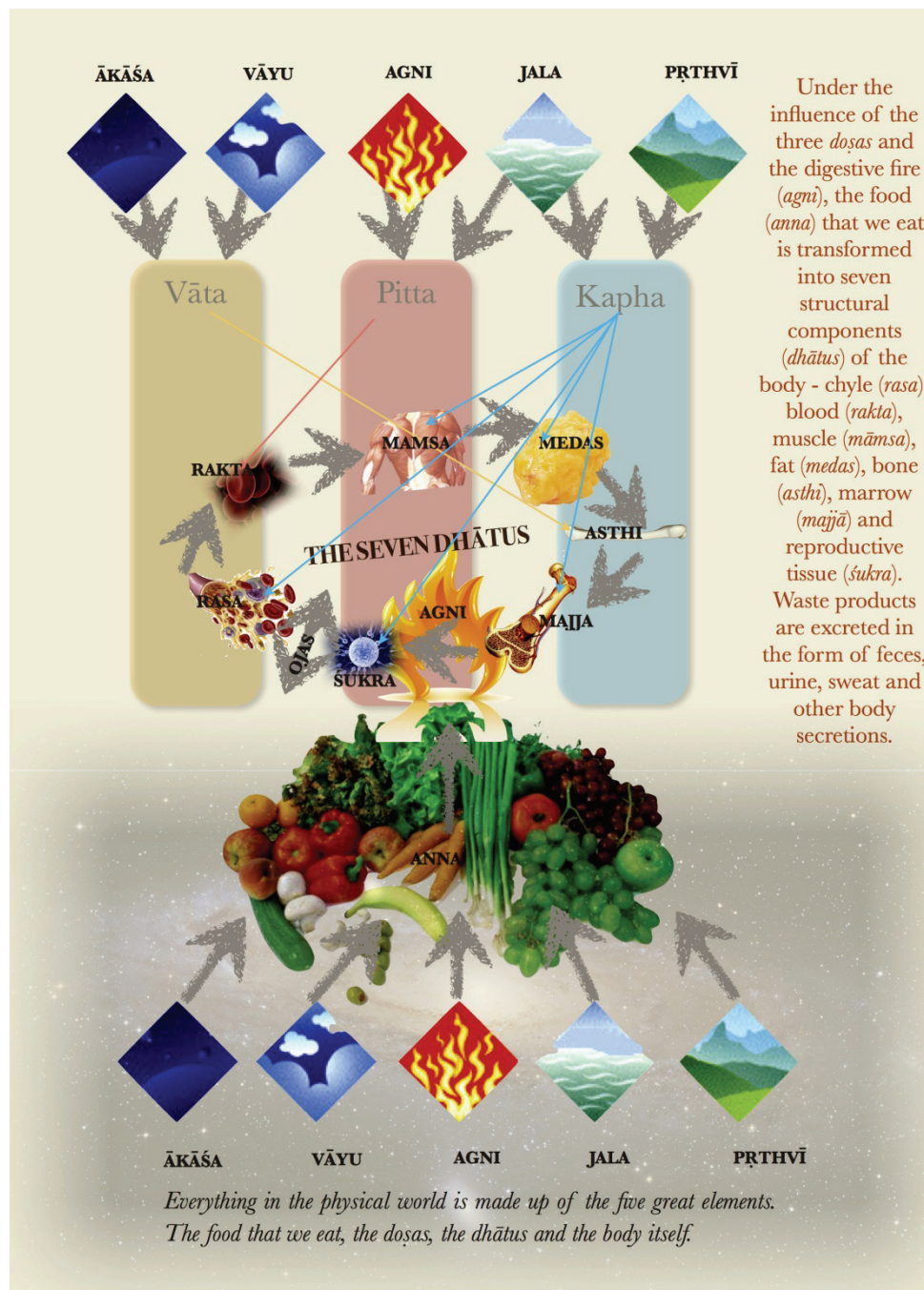
The physical universe is made up of the five great elements or *pañcamahābhūtas*, which are symbolically represented by earth (*prthvī*), water (*ap*), fire (*tejas*), air (*vāyu*) and space (*ākāśa*). To simplify, they denote space and the solid, liquid, thermal and gaseous states of physical matter and correspond to the five sense perceptions of sound, smell, taste, colour and touch. Everything in the visible universe including the human body is made up of the five elements in various permutations and combinations. Thus, the imbalance in the human body can be corrected by using appropriate substances from the external environment.

The five elements organize dynamically into the three *doṣas* in the body and govern anabolic and catabolic activities. *Vāta*, *Pitta* and *Kapha* are the three *doṣas* that serve as the functional units of the body. *Kapha* is a combination of the principles of earth and water and broadly represents anabolism. *Pitta* is a combination of the principles of water and fire; it represents transformation and catabolism. *Vāta* is a combination of the principles of wind and space; it represents regulation and control. Under the influence of the three *doṣas* and the digestive fire (*agni*), the food that we eat is transformed into seven structural components (*dhātus*) of the body: chyle (*rasa*), blood (*rakta*), muscle (*māmsa*), fat (*medas*), bone (*asthi*), marrow (*majjā*) and reproductive tissue (*śukra*). Waste products are excreted in the form of faeces, urine, sweat and other body secretions. When this transformation is completed, there is *ojas* or innate vitality and immunity that create higher levels of health and well-being.

In the Ayurvedic view, when can an individual be said to possess a high level of health and vitality?

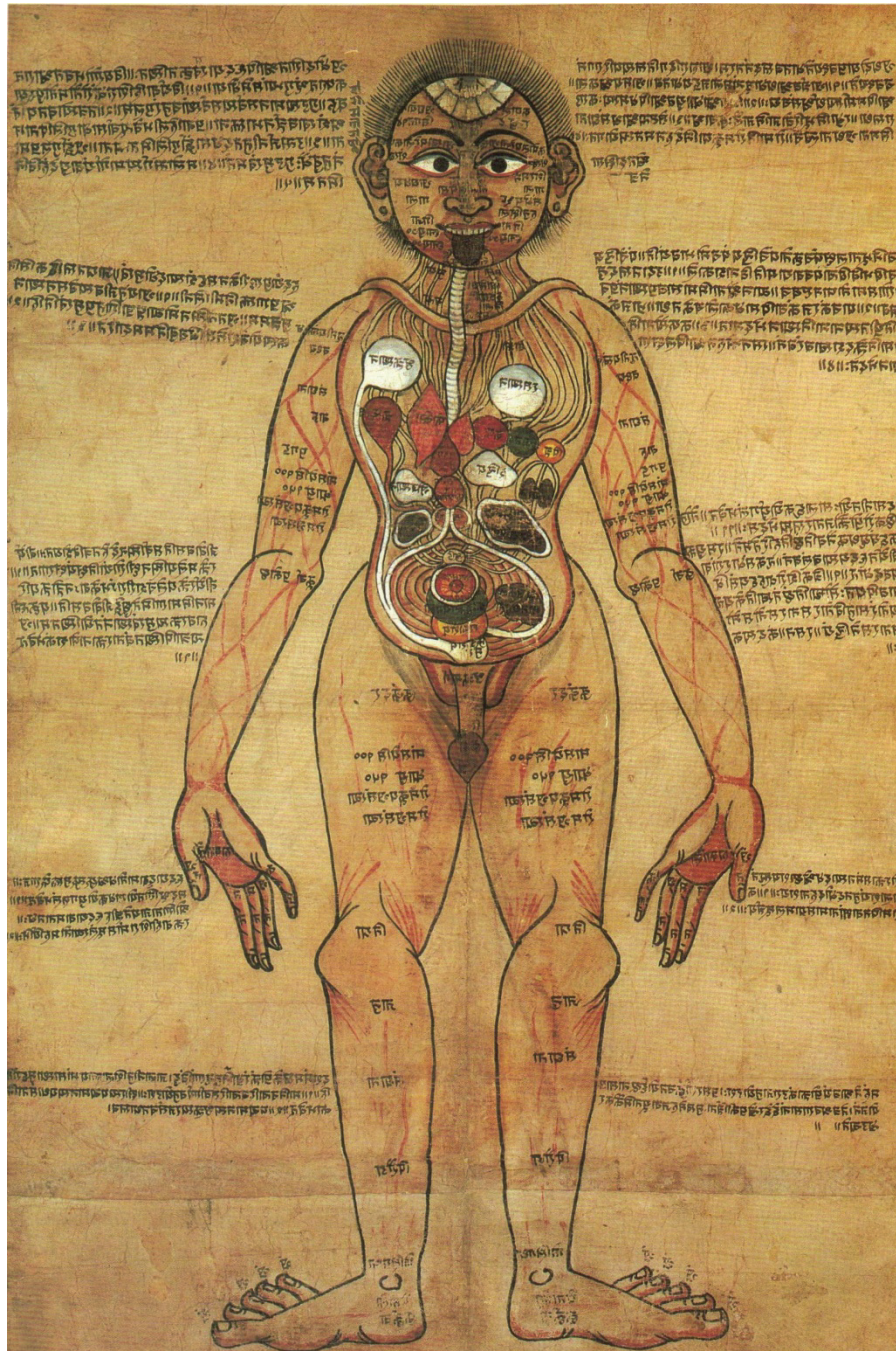
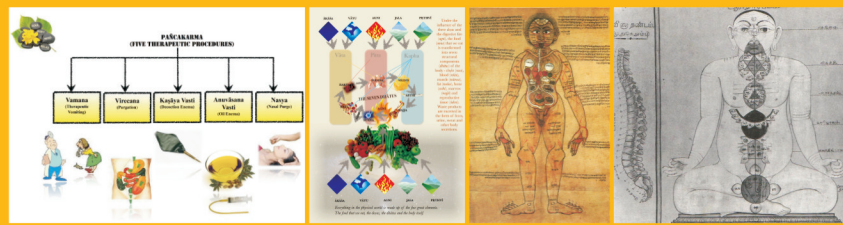


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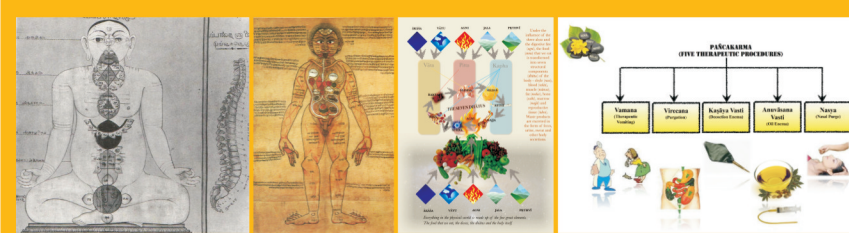


This diagram depicts the correspondence between the materials that make up the external world and the living body, as well as the transformation of food into the tissues of the body.

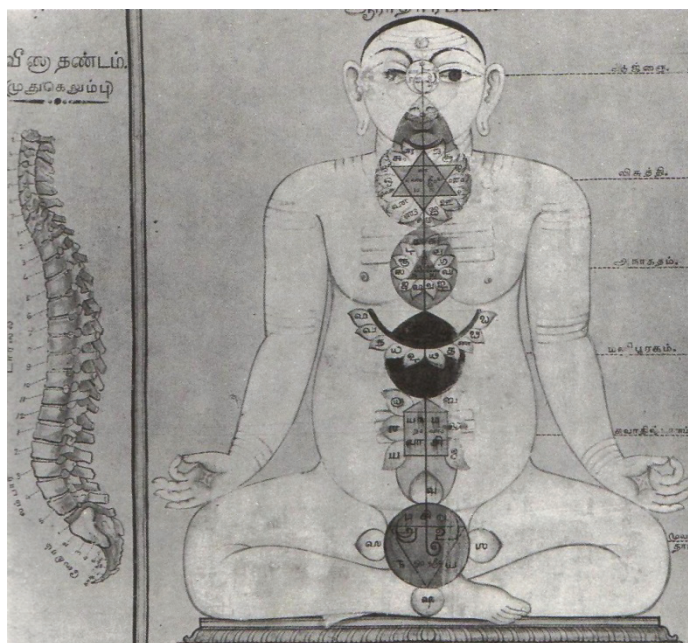
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The Anatomical Man. Anatomical painting with Sanskrit medical annotation. This Nepalese painting is the only known example of an illustrated medical text on anatomy in the tradition of Ayurveda. (Courtesy: Wellcome Institute for the History of Medicine, London)



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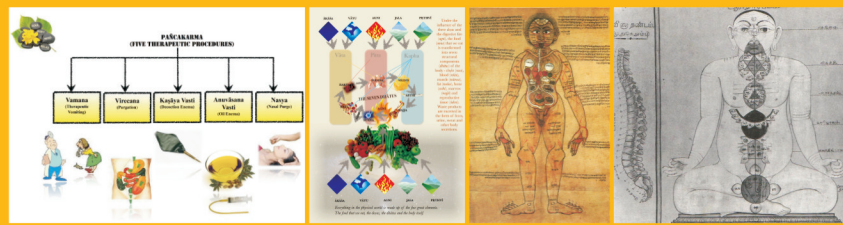


In this painting from Thanjavur, Tamil Nadu, 19th century, the position of the *cakras* is related to an anatomically correct spine as well as to various divinities. (Courtesy: National Museum, New Delhi)

Treating diseases to restore health

Disease manifests when the *doṣas* are out of balance leading to derangement of the *dhātus* or structural components of the body. A judicious use of plant, animal and mineral substances formulated into medicines by combination and processing supported by dietary and behavioural changes can restore health. Medicine, diet and behaviour are the three essential components of Ayurvedic treatment.

Medicine is internal or external, regulative or purificatory and surgical or non-surgical. Internal medications are formulated into various dosage forms like decoctions (*kaṣāya*), medicated wines (*ariṣṭa*), pills (*guṭikā*), medicated ghee (*ghṛta*), medicated jam (*lehya*), herbal powders (*cūrṇa*), incinerated ash (*bhasma*), fresh juice (*svarasa*) and so on and so forth. External treatments include massage and different methods of oiling and



fomentation. Regulative treatment comprises of medicine, diet and behavioural changes without cleansing the body. Purificatory treatments comprise of therapeutic emesis (induced vomiting), purgation, enema, nasal purge and bloodletting. When emesis, purgation, oil enema, decoction enema and nasal purge are given in sequence, it is known as *pañcakarma* or five procedures.

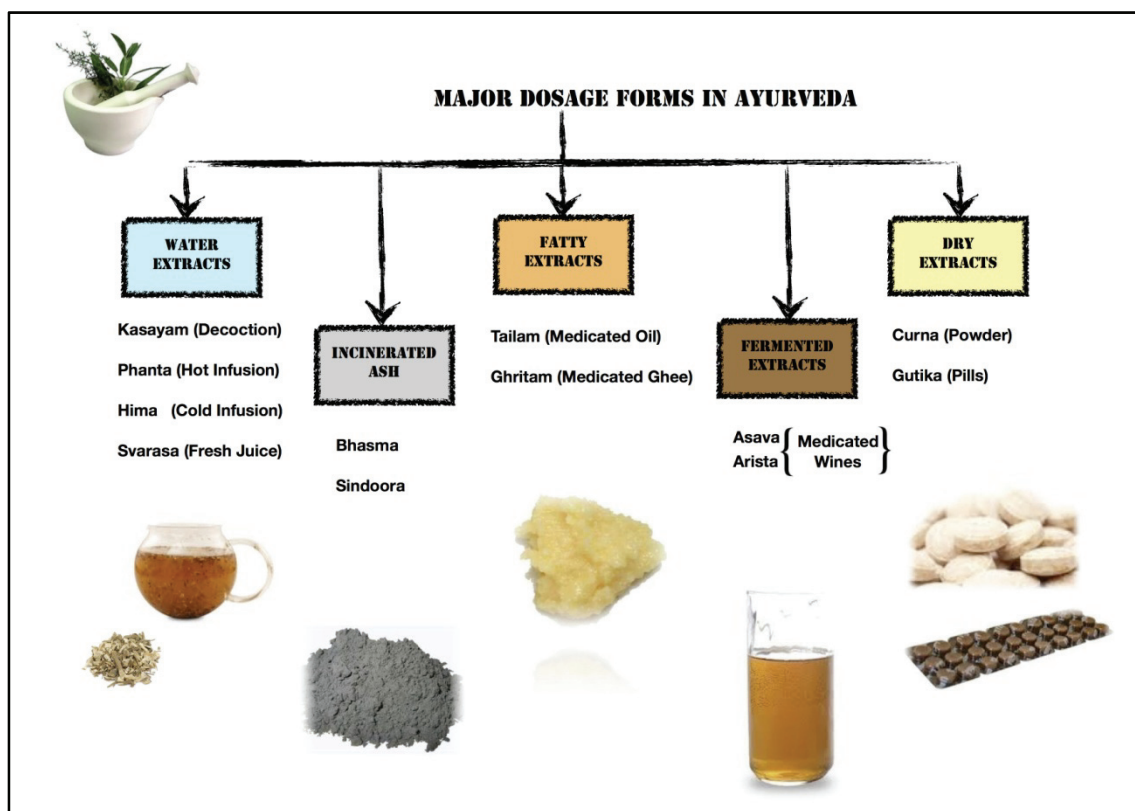
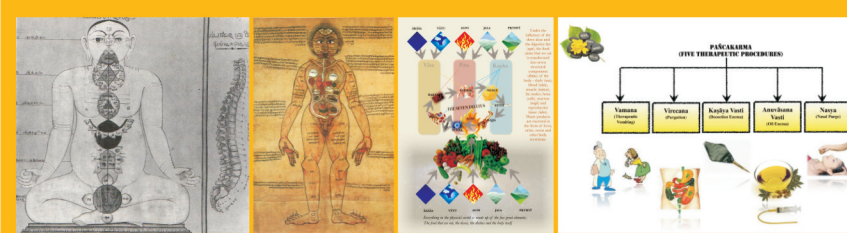


Chart listing the major dosage forms used in Ayurveda for administering medicines.



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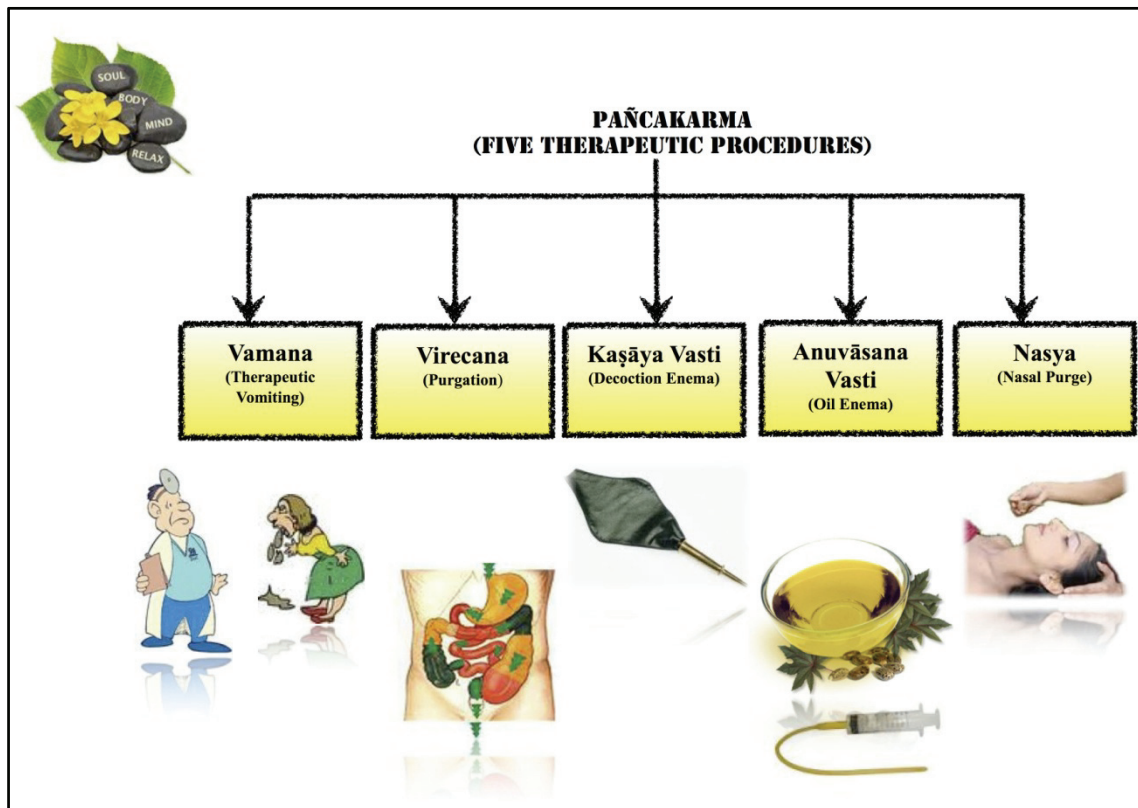
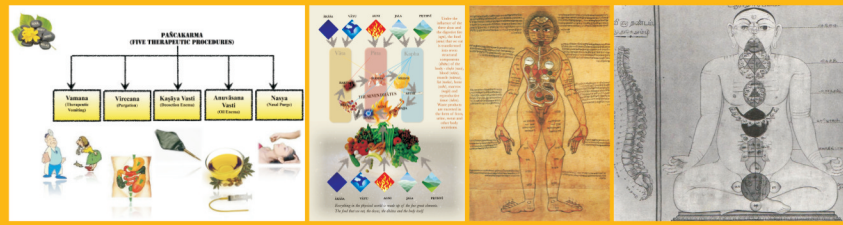


Chart listing the five therapeutic procedures known as *Pañcakarma*

Ayurveda also advises to combine physical treatment with psychological and spiritual interventions like prayer, meditation, control of sense organs and the like.

Why should a medical treatment include meditation, self-control, etc.?



Comprehension questions

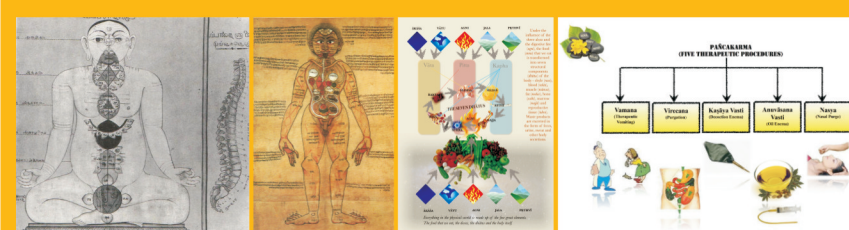
- What are the goals of life? How does Ayurveda help to achieve them?
- Ayurveda does not consider complete health an end in itself. What is the purpose of good health according to Ayurvedic principles?
- What is the difference between a happy life and a wholesome life?
- Explain the concept of personalized medicine as laid down by Ayurveda.

Match the following

<i>pañcamahābhūtas</i>	vitality
<i>doṣas</i>	body, mind, self
<i>ojas</i>	seven structural components
<i>dhātus</i>	five procedures of treatment
<i>pañcakarma</i>	five elements
tripod of human life	<i>vāta, pitta, kapha</i>

Project ideas

- Gather information on five common plants that are within our reach and have great medicinal uses: neem, turmeric, pepper, coriander and cinnamon. List their main properties, both in the kitchen and as medicinal plants.
- Visit your relatives / neighbours and prepare a case history of those who underwent an Ayurvedic treatment. Collect data that includes demographic details, the diseases the patients were suffering from, the kind of Ayurvedic medicines they took, etc. Note the extent of improvement / cure (partial? permanent?) they observed in themselves.



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- Look at the following components that Ayurveda takes into account: (1) diet (foods: natural, seasonal, and organic); (2) daily routine (meditation, exercise, sincerity of effort); (3) lifestyle (getting up before sunrise, sleeping early, exercising, contact with nature); (4) actions and activities (contributions to social well-being). Now do a little survey among your friends and note down your findings under each head. Based on your survey, write an essay on ‘Ayurveda and the Adolescent’.

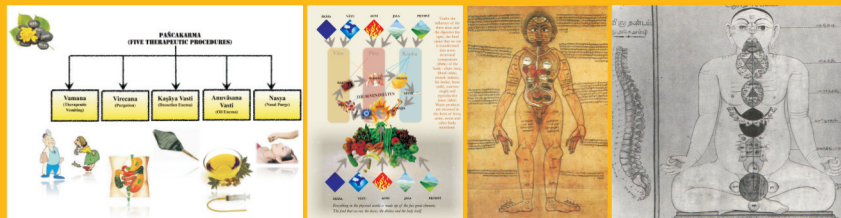
Extension activities

- Work on a project that shows the role performed by traditional health workers in our country. Select a small town or a village where healthcare is being provided by traditional health providers such as bonesetters, midwives, masseurs, Ayurvedic, Unani or Siddha practitioners. Collect data on the number of people who benefit from their services and their social as well as health conditions. How can such services be utilized for the masses?
- Put together a recipe from the kitchen shelf that has at least one medicinal plant among its ingredients. Write about the uses of the plant and the ailments it can help cure. Also mention any precautions to be taken during its usage so as to avoid harmful effects if any.

Further Reading

1. Arun Dahanukar Sharadini & Urmila Mukund Thatte, *Ayurveda Revisited*, Popular Prakashan, Mumbai, 2000
2. M.S. Valiathan, *The Legacy of Caraka*, Orient Longman, 2003
3. M.S. Valiathan, *The Legacy of Susruta*, Orient Longman, 2007
4. M.S. Valiathan, *The Legacy of Vagbhata*, Universities Press, 2009

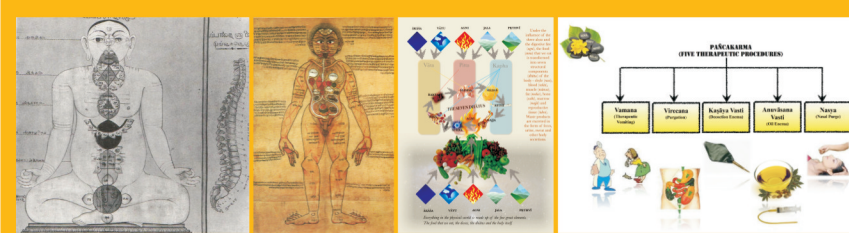
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5. D. Wujastyk, *The Roots of Ayurveda: Selections from Sanskrit Medical Writings*, Penguin Books, 2003

Internet Resources (all URLs accessed in May 2012)

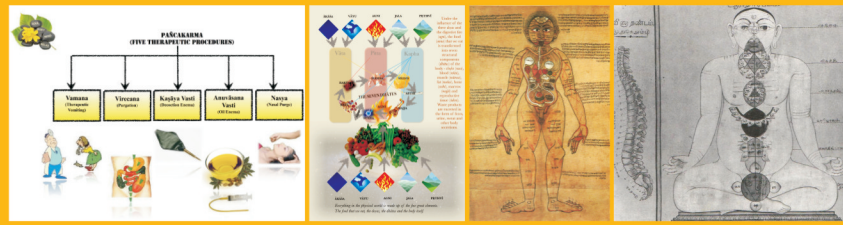
- Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry of Health & Family Welfare, Government of India:
<http://indianmedicine.nic.in/>
- Central Council for Research in Ayurvedic Sciences (CCRAS), an autonomous body of the department of AYUSH:
<http://www.ccras.nic.in/>
- AYUSH Research Portal: Evidence Based Research Data of AYUSH Systems at Global Level:
<http://ayushportal.ap.nic.in/>
- Traditional Knowledge Digital Library. Representative Database of 1200 Ayurvedic, Unani and Siddha Formulations:
www.tkdlib.res.in/tkdlib/langdefault/common/Home.asp?GL=Eng
- Digital Helpline for Ayurveda Research Articles:
<http://dharaonline.org/Home>
- An Annotated Bibliography of Indian Medicine:
<http://indianmedicine.eldoc.ub.rug.nl/>
- Institute of Ayurveda and Integrative Medicine:
www.iaim.edu.in/
- U.S. Government's National Center for Complementary and Alternative Medicine (NCCAM), page on Ayurveda:
<http://nccam.nih.gov/health/ayurveda>
- Videos on Ayurveda and other systems of medicine:
www.ayushvideos.org/



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- About a film by Pan Nalin featuring five elements in visible and invisible forms:
www.ayurvedafilm.com/
- A feature on Ayurveda that appeared on the Public Broadcasting Service (PBS) of the USA:
www.pbs.org/frontlineworld/stories/india701/
- Video: Emergency care for snake bite. A snake bite victim is revived by a traditional poison healer with participation of local community. Medicines are administered in the eyes and through the nostrils followed by internal medicines to neutralize the effects of the venom and the patient regains consciousness and orientation within an hour.
www.youtube.com/watch?v=vOe7XUZDgT4&feature=youtu.be
- Video: Ayurveda heals a chronic bedsore. This video shows an Allopathic neurosurgeon acknowledging with amazement the effect of simple Ayurvedic medicines in healing a chronic bedsore that did not respond to the most powerful antibiotics available.
www.youtube.com/watch?v=SFEI7w2tiWE&feature=youtu.be





Extracts from Primary Texts

The oath of Caraka

Initiation as a medical student

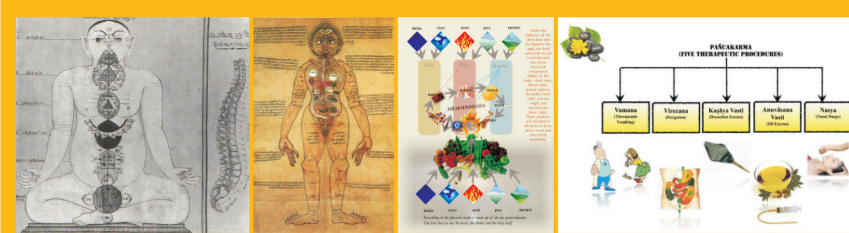
The teacher then should instruct (1)* the disciple in the presence of the sacred fire, Brāhmaṇas (Brahmins) and physicians, (saying) ‘Thou shalt lead the life of a celibate, grow thy hair and beard, speak only the truth, eat no meat, eat only pure articles of food, be free from envy and carry no arms.

‘There shall be nothing that thou shouldst not do at my behest except hating the king, causing another’s death, or committing an act of great unrighteousness or acts leading to calamity (2).

‘Thou shalt dedicate thyself to me and regard me as thy chief. Thou shalt be subject to me and conduct thyself for ever for my welfare and pleasure. Thou shalt serve and dwell with me like a son or a slave or a supplicant. Thou shalt behave and act without arrogance, with care and attention and with undistracted mind, humility, constant reflection and ungrudging obedience. Acting either at my behest or otherwise, though shalt conduct thyself for the achievement of thy teacher's purpose alone, to the best of thy abilities.

‘If thou desirest success, wealth and fame as a physician and heaven after death, thou shalt pray for the welfare of all creatures beginning with the cows and Brāhmaṇas (3).

* Numbers inserted in the extracts refer to the notes that follow them.

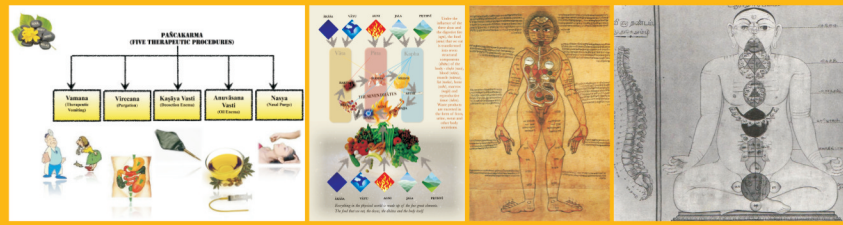


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‘Day and night, however thou mayest be engaged, thou shalt endeavour for the relief of patients with all thy heart and soul. Thou shalt not desert or injure thy patient for the sake of thy life or thy living. Thou shalt not commit adultery even in thought. Even so, thou shalt not covet others’ possessions. Thou shalt be modest in thy attire and appearance. Thou shouldst not be a drunkard or a sinful man nor shouldst thou associate with the abettors of crimes. Thou shouldst speak words that are gentle, pure and righteous, pleasing, worthy, true, wholesome, and moderate. Thy behaviour must be in consideration of time and place and heedful of past experience. Thou shalt act always with a view to the acquisition of knowledge and fullness of equipment.

‘No persons, who are hated by the king or who are haters of the king or who are hated by the public or who are haters of the public, shall receive treatment. Similarly, those who are extremely abnormal, wicked, and of miserable character and conduct, those who have not vindicated their honour, those who are on the point of death, and similarly women who are unattended by their husbands or guardians shall not receive treatment (3).

‘No offering of presents by a woman without the behest of her husband or guardian shall be accepted by thee (4). While entering the patient’s house, thou shalt be accompanied by a man who is known to the patient and who has his permission to enter; and thou shalt be well-clad, bent of head, self-possessed, and conduct thyself only after repeated consideration. Thou shalt thus properly make thy entry. Having entered, thy speech, mind, intellect and senses shall be entirely devoted to no other thought than that of being helpful to the patient and of things concerning only him. The peculiar customs of the patient’s household shall not be made public (5). Even knowing that the patient’s span of life has come to its close, it shall not be



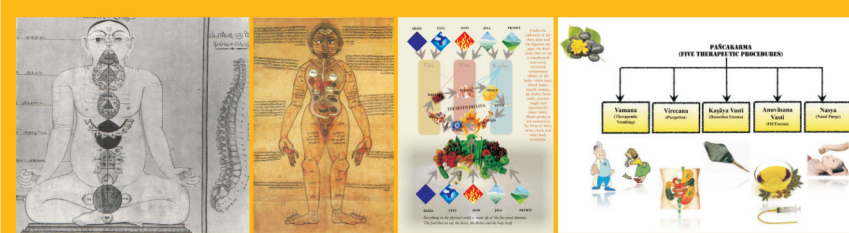
mentioned by thee there, where it so done, it would cause shock to the patient or to others. Though possessed of knowledge one should not boast very much of one's knowledge. Most people are offended by the boastfulness of even those who are otherwise good and authoritative.

‘There is no limit at all to the Science of Life, Medicine. So thou shouldst constantly apply thyself to it with diligence. This is how thou shouldst act. Also thou shouldst learn the skill of practice from another without carping. The entire world is the teacher to the intelligent and a foe to the unintelligent. Hence, knowing this well, thou shouldst listen and act according to the words of instruction of even an unfriendly person, when his words are worthy and of a kind as to bring to thee fame, long life, strength and prosperity (6).’

Thereafter the teacher should say this: ‘Thou shouldst conduct thyself properly with the gods, sacred fire, Brāhmaṇas, the guru, the aged, the scholars and preceptors. If thou hast conducted thyself well with them, the precious stones, the grains and the gods become well disposed towards thee. If thou shouldst conduct thyself otherwise, they become unfavourable to thee.’ To the teacher that has spoken thus, the disciple should say, ‘So be it.’ *Caraka Saṃhitā, Vimanasthana*, 8.9 (tr. adapted from W.T. Reich, ed., *Encyclopedia of Bioethics*, revised edn, vol. 5, Simon & Schuster MacMillan, New York, 1995).

Notes

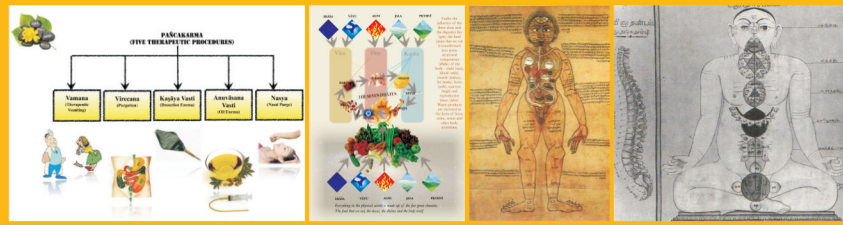
1. This oath is extracted from the *Caraka Saṃhitā*, one of the earliest text books of medicine in Ayurveda. The oath of Hippocrates is a parallel in the western tradition of medicine for comparison, which in a modified form is widely used in medical



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schools even today. The oath of Hippocrates is shorter than the Oath of Caraka. It is probable that Caraka's oath predates Hippocrates but it is difficult to fix the date of *Caraka Samhitā* as it has been revised several times over a period of a thousand years and different layers of the text may have been added in different periods. Caraka's oath is taken at the time of initiation into medical studies, whereas the Hippocratic Oath is taken at the time of completing medical studies.

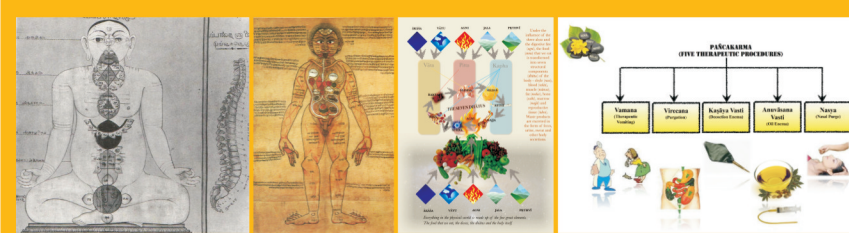
2. It is interesting to note that the student is given the freedom to disobey if the teacher makes unreasonable demands.
3. Brāhmaṇas and cows are given priority as they have dedicated their lives for the welfare of society. On the other hand, persons who are harmful to society are given the least priority. It was considered important to allow patients on their deathbeds to die peacefully without being subjected to futile treatments.
4. Extreme caution was to be exercised when interacting with women, especially because in ancient times, the physician used to make house visits to administer treatment.
5. Protection of the privacy of the patient has been emphasized mincing no words. This is in tune with the Health Information Portability and Accountability Act (HIPAA) that is enforced today in countries like USA.
6. The concept of continuing medical education is explicitly and beautifully articulated by emphasizing the vast scope of medical knowledge, willingness to receive knowledge from friend and foe and the need to engage in constant study of the subject.



Individualizing Diet

Eight factors

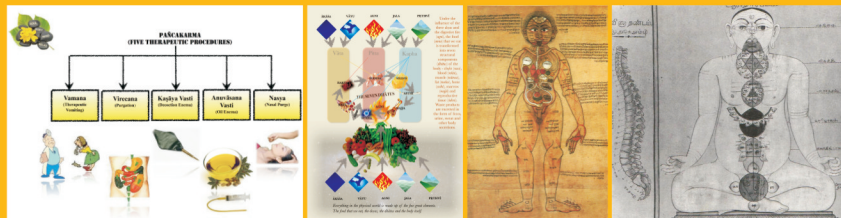
There are eight specific factors that constitute the basis of a balanced diet (1) — these are nature, processing, combination, quantity, place, time, regulations and the individual. Nature refers to the natural properties of a substance like heavy and so on just like black gram and green gram, boar and antelope (2). Processing brings about change in the natural properties of food substances (3). The natural properties are modified by contact with water and fire, by cleansing, churning, influence of time, place, fumigation, trituration, passage of time and storage vessels. Combination is the mixing of one or more substances (4). This leads to emergence of new properties. For example, the combination of honey and ghee or honey, fish and milk. Quantity refers to quantification of total food as well as its individual components. Total quantity is concerned with the total quantity of food to be consumed (5). Individual quantity is concerned with the quantity of each component of the food to be consumed. Place refers to the origin, distribution and geographical suitability of a particular food substance. Time is of two types — absolute and relative. Relative time is dependent on stage and phases of disease, absolute time is dependent on adaptation to seasons (6). The regulations are the guidelines for eating and this is dependent on the signs of digestion. The individual is the person who eats, who is the basis of all habitual adaptations (7). Thus has been explained the eight important factors underlying balanced diet. *Caraka Samhitā, Vimānasthāna*, 1.21-22 (tr. Dr. P. Ram Manohar).



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Notes

1. Balanced diet is an important component of both preventive and curative care in Ayurveda. Just like treatment, diet has to be customized according to the needs of an individual. This passage from *Caraka Samhitā* outlines eight factors that should be considered before customizing diet regimen for an individual.
2. Black gram is by nature heavy to digest, whereas as green gram is light and easily digested. Boar is heavy to digest, while antelope meat is light.
3. It is important to note that processed food can have properties very different from the original raw material. Processing can change the properties of substances for good or bad. Some substances are best eaten raw while others are good if cooked or processed.
4. Combining different substances together can greatly modify their properties. If pepper is added to turmeric, the bioavailability of curcumin, an alkaloid found in turmeric that has anti-inflammatory and anti-cancer properties, increases two thousand times. Combination of fish and milk is considered to be harmful for the body.
5. The total quantity as well as the quantities of the individual components of the food to be eaten must be determined to balance diet. The total quantity is decided by examining the strength of digestion. The quantities of the individual components are determined by considering the constitution of the individual, lifestyle and other such factors.
6. Diet will need to be modified according to time and place. For example, the diet has to be different in summer and winter as the requirements of the body will change according to the season. Diet must also be adjusted according to climatic and geographical peculiarities of a particular place.



7. The profile of the individual is the most important factor to be considered to finalize the diet regimen. The constitution, digestion, activity, habits and allergies are some of the aspects to be considered to tailor diet to the needs of an individual.

Comprehension questions

- What are the injunctions laid down in Caraka's oath regarding the behaviour of a physician?
- What features of Caraka's oath strike you as relevant to today's medical and socioeconomic conditions?
- How thorough is the above list of factors for a balanced diet? Would you take them into consideration while trying to improve your own diet?

Extension activities

- Download the oath of Hippocrates from the Internet and make a systematic comparison with Caraka's oath.
- Create a diet chart that consists of wholesome foods laid down by Ayurveda, taking into account other elements (season, time of the day, geographic situation, type of activity, etc.). Start a campaign on Facebook to popularize such a wholesome diet, especially among the student community.
- Research the short-term and long-term dangers of processed foods. Prepare a PowerPoint presentation on the disorders caused by overconsumption of processed foods.

