

**Review Article****RASAYANA: THE REJUVENATING REMEDY FOR HEALTH****Yadav Yadevendra^{1*}, Kumar Vipin², Sharma Usha³, Sharma Khem Chand³**¹Medical officer, Dept. of Ayurveda Evm Unani Sewa, Uttarakhand.²Assistant Prof. Dept. of Paramaceutical Sciences, Gurukula Kangri Vishwavidyalaya Haridwar, Uttarakhand.³Assistant Professor, ⁴Professor and Head of the Department, Dept. of Rasa Shastra Evm Bhasajaya Kalpana, Rishikul Campus, Uttarkhand Ayurved University, Dehradun, Uttarakhand.**ABSTRACT**

Gradual increase of Population in urban area may leads to environmental pollution and microbial infection in air and water increases exponentially. Most of the persons in the population are in trap of mental stress and depression due to struggle in the life and overload of work. So both of these conditions are responsible for so many disease and ill-health, and one more important thing is that due to increase negligence and uninhabited use of processed food, the ill effects on health are compound manifold when coupled with unhealthy lifestyle and food habits. So there is a need of taking dietary supplementary food or nutraceutical. The main aim of Ayurveda has been working upon a twofold process i.e., to maintain the health of a healthy individual and to treat the one with the disease. Thus by laying emphasis on the first aspect and combining it with the knowledge of the role of phytochemical as, one can gradually deduce an effective module for living healthy and line of treatment of metabolic and geriatric disorders. The phytochemical are the essential nutrients, which are naturally contained in plants and are required for normal physiological functions. The *Rasayana* not only boost general health but also provide the necessary raw materials to strengthen the defense mechanism of the body.

KEYWORDS: Phytochemical, Antioxidant, *Rasayana*, Rejuvenation, Phytotoxins,**INTRODUCTION**

Living healthier is the prime objective of Ayurveda and secondary is to get rid of many disease if occur. Healthier one is living longer and able to achieve *Purusartha-catustaya* (main four aim of human). Medical and health services of different counties of the globe are continuously in search of safe, effective, economical and easily available to everyone. The traditional health care system of various old civilizations serving the human kinds from ages. Their value is still extensively accepted and their area becomes widen due to immersing of new disease. Main reason of these problems are arises due to increasing stress, irregular eating habits, and excessive travel, indiscriminate use of antibiotics, high alcohol consumption, high intake of packaged and processed food, and pollution are all factors that contribute to this alarming trend. Natural, fresh, properly processed, nutrients rich and hygienic food are proportional to health. Enjoying every moments of life and always remain mentally active is also imparting good life. Always keeping ourselves physically active is fundamental need of body. According to Dr. S. Oklund that Health status and quality of life depend on multiple measures.

Successful or healthy aging depends on a combination of lifestyles involving persistence of physical and mental functioning, avoidance of disease, and enjoyment of family and community support. In Ayurveda different kinds of *Rasayanas* are mentioned, various types of *Rasayana Dravya*, *Achar Rasayana*, and regimen are mentioned to maintain good health. *Rasayana* is a word taken from the Sanskrit language, which means: *Path (Ayana)* of the essence (*Rasa*). It is a science of increasing life expectancy, as per early Ayurvedic medicine.

Materials and methods

Data and evidences were collected from secondary sources which include books, articles, reference materials, Wikipedia etc.

Rasayana: *Rasayana* is the seventh branch of the eight branches of Ayurveda.^[1] Definition of *Rasayana* was mentioned by Acharya Charka as, "The *Rasayana* drugs and formulations provides longevity, memory, intelligence, freedom from diseases, youthful age, excellence of luster, complexion and voice, optimum strength of physique and sense organs, respectability and brilliance."^[2]

Classification of Rasayana

On the basis of mode of use^[3]

- *Kutipravesika*- In door Regimen
- *Vatatapika*- Out door Regimen

On the basis of purpose of use^[4]

- *Kamaya Rasayana* -Promoter of normal health
- *Prana Kamaya*- promoter of life vitality and longevity.
- *Medha Kamaya*- promoter of intellect.
- *Sri Kamaya*- promoter of complexion and lusture.

Most of the *Rasayana Dravya* is use singly or in combination. Different Formulations of *Rasayana* like *Curna, kalka, svarasa, Avaleha, Taila, Grta, Ksheer, Guggulu* etc.

Phytochemicals

Phytochemicals are non-nutritive plant chemicals that have protective or disease preventive properties. They are considered non-essential nutrients, meaning that they are not required by the human body for sustaining life before few years ago. It is well-known that plant produces these chemicals to protect themselves but recent research demonstrate that they can also protect humans against diseases. There are more than thousands of known phytochemicals^[5]. Phytochemicals with established roles in the body are classified as essential nutrients^[6]. Phytochemical are required for normal physiological functions, so must be obtained from the diet in humans.^[7]

Table 1: Types of Phytochemicals^[8]

S.No.	Phytochemical	Sources	functions
1	Carotenoids	Yellow, orange and red color of many fruits and vegetables, including red peppers, papayas, tomatoes & watermelon.	Strong antioxidants improve eyesight reduced & risk of many diseases
2	Flavonols	Apples, apricots, beans, cherry tomatoes, pears, onions, red grapes & sweet cherries,	Reduce the risk of cardiovascular disease and lower blood pressure
3	Anthocyanins	Reds, blues, and purples found in fruits and vegetables like strawberries, raspberries, blackberries, cherries, eggplants, grapes, red cabbage, and red apples.	Antioxidants that can help protect the liver, improve eyesight, reduce blood pressure, and even reduce the risk of many serious diseases
4	Lignans	Flaxseeds, grains, legumes, fruits, berries, and vegetables.	Anticarcinogenic effects
5	Indole-3-carbinol	Cruciferous vegetables like broccoli, cauliflower, collard greens & cabbage.	Lower risk of several types of cancer & protects against DNA damage
6	Isoflavones	Soybeans	Mimic the effects of estrogen in the human body, so called phytoestrogens. Reduce menopausal symptoms and osteoporosis
7	Resveratrol	Grapes, peanuts, pistachios, blueberries, cranberries, mulberries, and even dark chocolate.	Cardio-protective effects.
8	Saponins	Beans	Interfere with the replication of cell DNA, thereby preventing the multiplication of cancer cells
9	Allicin	Garlic	Anti-bacterial effect
10	Proanthocyanidins	Cranberry	Reduce the risk of urinary tract infections and will improve dental health.

Rasayana As Phytochemical

Most of the *Rasayana dravya* is obtained from plant. These *Dravya* may be fruit, root, bark, flower or whole part of the plant etc. Most of these *Dravya* are very rich in essential nutrients and other non-nutritive chemicals. As research is carried out on it, most of these chemicals got identified, isolated and their therapeutic values are established later. Now a day, these chemicals are commonly known as phytochemicals. Some points are present that show the similarity between *Rasayana* and Phytochemicals.

1. According to Ayurveda, *Rasayana* signifies for prolongation of life and cure of disease^[9]. Most of the Phytochemicals do so. It is now well known that the generation of free radicals or reactive oxygen species from incomplete reduction of molecular oxygen during aerobic respiration is closely related to cellular damage. Free radical hits every single cell in the body about 10,000 times a day. It can cause damage both to the structure and function of the body cells. Regulation of the balance between the production of reactive oxygen species by cellular processes and its removal by antioxidant defense system maintains normal physiological processes. This damage has been linked to the onset of many degenerative diseases such as cancer, Athero-sclerosis, Age-Related Macular Degeneration, Cardio-Vascular Disease, inflammatory conditions and diabetes as well as premature aging. Thus, antioxidant compounds in food play an important role as a health protecting factor.^[10]
2. The processing and heating in Ayurvedic *Panchwidha kashaya kalpana* is, such which keeps the nutritive value of the herbs intact. Potency of these *Kalpana* decreases from *Swarasa* to *Phanta*^[11]. Phytochemicals in freshly harvested plant foods may be degraded by processing techniques including cooking. The main cause of phytochemical loss from cooking is thermal decomposition.^[12]
3. Acharya Charka advocated for the use of herbs grown in The Himalaya because of their more potency^[13-14]. As stressful conditions improve the medicinal value manifold^[15]. They generally have biological activity in the plant host and play a role in plant growth or defense against competitors, pathogens, or predators^[16].
4. Various processes used in manufacturing of *Rasayana* formulation improve their nutritive value, like *Shodhana* of *Visha*^[17] (Poisons) like *Bhalataka*^[18]. In some cases, processing of food is necessary to remove phytotoxins or antinutrients; for example societies that use cassava as a staple have traditional practices that involve some processing (soaking, cooking, fermentation, etc.),

which are necessary to avoid getting sick from cyanogenic glycosides present in unprocessed cassava^[19]. *Avaleha* formulation of *Amala* (*Embllica officinale*) in *Chwayanprash* and *Brahmarasayan*, *Vidanga* (*Embelia ribes*) in - *Vidang Avaleha* etc.^[20] increase their medicinal value manifold. Vitamin-C, present in *Embllica officinale* remains unaffected by heating. Lycopene present in tomatoes which may remain stable or increase in content from cooking due to liberation from cellular membranes in the cooked food. Food processing techniques like mechanical processing can also free carotenoids and other phytochemicals from the food matrix, increasing dietary intake.^[19]

5. Seasonal fully grown drugs (fruits and vegetables) used for making formulation are the basic requirement of good quality of medicines. Mature fruits have more coloring pigments i.e. Phytochemicals. That is why *Embllica officinale* grown in late winter season is used for making medicine.^[21] At this time, coloring pigments are more in amount.
6. Some recent research on *Rasayana Dravya* are as
 - i. Ethanolic extract of *Pipalli* (*Piper nigrum*) show antioxidant activity due to presence of alkaloids, Glycosides, tannins and flavonoids.^[22]
 - ii. Phytochemical analysis of *Amala* (*Embllica officinale*) show presence of tannins, saponins, flavanoids and phenols of which flavonoids and saponins were found to be the most inhibitory towards all the pathogens.^[23] These Phytochemical acts as Antimicrobial, anti-ulcerous, immunomodulator, anti-carcinogenic etc hence it is useful in curing like diseases like diabetes, cough, asthma, bronchitis, hyperacidity, peptic, skin diseases, cardiac disorders, intermittent fever, graying of hairs.^[24]
 - iii. *Guduchi* (*Tinospora cordifolia*) is king of Ayurvedic medicine. Methanolic and aqueous extract Provides health benefits in cancers, coronary heart disease, diabetics, hypertension, inflammation, microbial, viral and parasitic infections, psychotic diseases, spasmodic conditions, ulcers etc.^[25]
 - iv. The extract obtained from the fruits of *Vebhitaka* (*Terminalia bellercia*) were qualitatively tested to identify the presence of Phytochemicals such as alkaloids, Phenols, Flavonoids, Saponins, tannins, quinones, steroids and Terpenoids. It has anti-diabetic, laxative, anticancer, anti-microbial, antioxidant, analgesic, hepato-protective activity, anti-ulcerogenic effect.^[26]
 - v. *Withania somnifera* also known as *Ashwagandha*, Indian ginseng and winter cherry. It's Pharmacological value as an adaptogen, antibiotic, abortifacient, aphrosidiac, astringent,

anti-inflammatory, deobstruent, diuretic, narcotic, sedative and tonic. It is potent Antioxidant. Stimulate the activation of immune system cells, such as lymphocytes and phagocytes. Counteract the effects of stress and generally promote wellness. All these action due to 35 Phytochemicals in it.^[27]

CONCLUSION

As long as we are alive, eating and breathing in a polluted world; our bodies will have to contact with various pathogenic microbes, carcinogens & free radicals. *Rasayana* or Rejuvenation therapy will help to maintain physical and mental health to promote prolongation of life. Phytochemicals show significant intimacy to *Rasayana Dravya*. Fruits or vegetables grown in natural conditions have more nutritive values than cultivated in artificial conditions and agricultural in the field. Phytochemicals are unique constituents of a healthy diet and play an important role in the network of antioxidants and nutrients. Eating more fresh and colorful fruits and vegetable is the basic need to maintain health in present scenario.

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