

CONCEPT OF RASAYANA IN AYURVEDIC LITERATURE

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ABSTRACT

The journey of man to live longer periods and remain healthy as large as a lives, has rested to an obsessive search for mixtures or materials that may produce the wanted results. To achieve the best health, with delayed aging system is also a most desirable thing, even within in the life span set by the genetic configuration. For this goal a quantity of materials and formulas, most of '*Rasayana*' are mentioned in *Ayurveda*. The current study has been planned as a step in updating the *Ayurvedic* pharmaceutical methods to cop up with the requirements of modern era. *Rasayana* or *Jara Cikitsa* is one amongst the eight branches of Ayurveda; practiced extensively and effectively since ages. *Acharya Charaka* has quoted as *Jaraa-Chikitsa* where as *Acharya Sushruta* has mentioned it as *Rasayana-Tantra*.

KEYWORDS: Rasayana, Vaya, Ayu, Medha, Balakar, Amalaki.

INTRODUCTION**Historical Background*****Vedic Kala***

No direct references can be observed in any of *Vedic* literatures. But, one can Get a number of references regarding the beneficial effects of *Rasayana* such as prolonging the life span, maintaining or establishing the youthfulness and also delaying the ageing process.

In *Rgveda*, there are hymns saluting *Aswinis* for their effective approach in the equilibrium of *Tridhatu*s and prolonging the life span.^[1]

Aswinis, known as *Devanam Bhisajau*', were experts in the field of *Rasayana*.

Their deeds concerned with *Rasayana* are as follows:

- Turned Kaksivan young from old.^[2]
- Kali was turned into a young subject.^[3]
- Cyavana became younger and his life span got increased.^[4]
- Citizens of Jahnu were endowed with strength and longer life span.^[5]
- Ghosa who was diseased, old and unmarried was turned into a healthy and young lady who later got married.^[6]
- Injured Syava was treated effectively and his life span lengthened.^[7]
- Old sage Vandana was converted into a youth.^[8]
- The life span of Somaka, the son of Sahadeva, got lengthened.^[9]
- Devas became *Ajaramara* by consuming the elixir which was originated during *Samudramathana* and so are the seven great sages.

In *Yajurveda* also, one can notice the chants increasing the life span and beneficial effects of *Rasayana* such as improving the status of *Indriyas*.

जीवेमशरदःशतम् is the prayer to Almighty God frequently seen to increase the life span of an individual.^[10]

Atharvaveda, to which *Ayurveda* is closely related, gives more references of *Rasayana*. Some of them are listed below:

अप्स्वन्तरमप्सुभेषजम्^[11]

Ap (water) is considered as the best medicine in the universe and it is the best *Rasayana Dravya*.

देवस्यपश्यकाव्यंअममार, नजीर्यति^[12]

Devas (Gods) neither become old nor they become a victim of death.

आपोहिष्ठामयोभुवास्तानउर्जेदधातन^[13]

Ap increases the *Urja* (strength) of the body.

अपलिताकेशाअशोकादन्ताबहुबाहवोर्बलम

उर्वोरोजोजंघयोर्जवःपादयोः

प्रतिष्ठाअरिष्टानिमेसर्वात्मानिमुष्टः

The individuals will be devoid of gray hair and mental instability, having strong teeth and body and perfect body activities.

Soma, the king of medicines, was given due importance in all *Vedas*, *Brahmana Granthas*, *Upanisads*, *Puranas* and later in *Samhitas*. Similarly, *Upanisads*, *Puranas* and other post *Vedic* treatises have highlighted the practice of *Rasayana*.

Caraka has dedicated the first chapter for *Rasayana* in *Cikitsasthana* and divided into four *Padas*. *Rasayana* has been given first preference because it not only maintains the healthy state of an individual but also cured ailments, the two faces of *Cikitsa*.

Susruta also dealt *Rasayana* in four separate chapters but he has pushed the *rasayana* concept back to the end chapters i.e. 27-29 of *chikitsasthana*. And *Vagbhata* have described in only one chapter in *Uttaratantra*. This reflects on the declining impact of *Rasayana* therapy in *Samhita* period itself.

Later combinatory works like *Bhavaprakasa*, *Sarngadhara Samhita*, *Yogaratanakara* have also dealt *Rasayana* in a separate chapter which followed *Vagbhata*.

Etymology

The word *Rasayana* is formed from two words viz. *Rasa* and *Ayana*.

रसगतौ + अच – रसः and अयगतौ अथवा ङणगतौ भावे ल्युट अयनम्

The word '*Rasa*' is formed from '*Ras Gatau*' Dhatu and '*Ac*' Pratyaya. Acaryas have given various meanings for *Rasa* at different contexts. Some of the common are -

1. *Rasa* is one that is experienced by *Rasanendriya*.
2. The one that nourishes *Rasa*, *Rakta*, etc. *Dhatu*s (continuously) daily is called *Rasa*.
3. The essence of the digested foodstuff is known as *Rasa*.
4. The one that traverses throughout the body due to its liquidity is termed as *Rasa*.
5. *Rasa* is one that moves all over the body continuously.

The word *Ayana* has various meanings as given in *Shabda Kalpa Druma* and *Vacaspatyam*. They are pathway, movement, road, place, site, abode, a way of entrance, an entrance etc.

In total, *Rasayana* is meant as -

रसस्यअयनंप्रापणंरसायनम्^[14]

Rasayana means the pathway for essence of foodstuffs towards all body tissue elements so as to nourish and replenish them.

V.S. Apte, famous grammarian, in his Sanskrit English Dictionary, states that *Rasayana* is

- an elixir of life (elixir vitae)
- any medicines supposed to prolong life and prevent old age
- serving as an elixir vitae i.e., that which gratifies or regales.

The classics have given the synonym *Rasayani* for *Srotasa* which means channels which carry nutrients for different body tissues.

Definition

- रसारसरक्तादय ईयन्ते प्राप्यन्ते अनेनेति रसायनम्^[15]

It means *Rasayana* is that by which *Rasa*, *Rakta* etc *Dhaatus* are obtained.

- *Acharya Charaka* has elaborated the meaning of *Rasayana* and quoted that :

लाभोपायो हि शस्तानां रसादीनां रसायनम्^[16]

It means the measures by which one can get excellence of *Rasa* etc *Dhaatus* are called *Rasayana*.

- रसानां रसरक्तादीनां अयनमाप्यायनं रसायनं, अथवा रसानां रसवीर्यविपाकादीनां

आयुः प्रभृति कारणानामयनं विशिष्टलाभोपायः रसायनं^[17]

In addition to this later he described that the one which nourishes, *Rasa*, *Rakta* etc. *Dhaatus* or the one which stabilises youthfulness and prolongs life with activities through its *Rasa*, *Virya* etc. is called *Rasayana*.^[18]

- *Arundatta* has described that *Rasayana* is one by which *Rasa*, *Raktadi Dhatus* get benefited through proper nourishment.^[19]

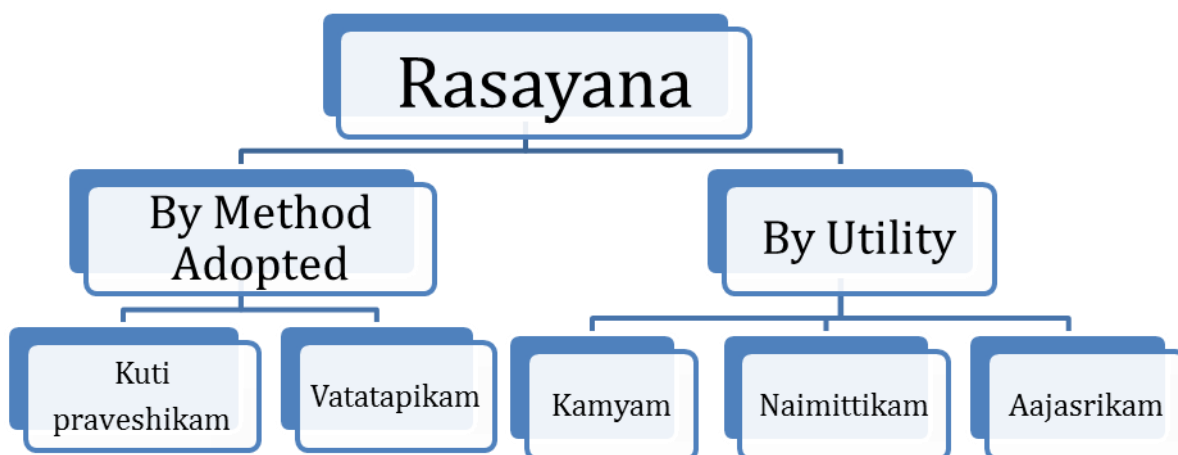
The 'Kairali' commentary of *Astanga Hrdaya* defines *Rasayana* as one that causes increase in the *Dhatus* from *Rasa* to *Sukra*.

- रसायनंचतज्जेयंयज्जराव्याधिनाशनम्^[20]

Rasayana is one which wards off *Jara* as well as *Vyadhi*.

- The one which cures *Jara* and *Vyadhi*, stabilises youthfulness; increases acuity of *Caksu* etc. *Indriyas*; nourishes the whole body and aphrodisiac is known as *Rasayana*. The same was adopted in *Vaidya Kaustubha*.
- *Gangadhara* has described that *Rasayana* is one which causes continuous nourishment to *Rasa*, etc. *Dhatus*, thereby replenishing them.^[21]
- According to *Harita*, *Rasayana* is that process by which there will be stability of body, all types of sensory and motor organs; and no graying of hair, wrinkling and baldness.^[22]

Classification of Rasayana



- Two types of *Rasayana* have been mentioned by *Acharya Charaka*.^[23]

i *Kutipravesika*

ii *Vatatapika*

This classification is based on the mode of administration. *Kutipravesika* is one in which *Rasayana* is given with person staying inside a closed *Kuti* whereas *Vatatapika* is that in which *Rasayana* is administered with patient exposed to *Vata* and *Atapa*. In other words, *Kutipravesika* is an indoor administration while *Vatatapika* is an outdoor administration of *Rasayana*.

Dronipravesika is similar to *Kutipravesika* with slight modification wherein the individual is made to stay in a *Droni* (made out of *Palasa*) for six months consuming milk diet.^[24]

- Three types of *Rasayana* by *Dalhana*. It is probably based on the utility of *Rasayana*.
 1. *Kamya*
 2. *Naimittika*
 3. *Ajasrika*
- *Kamya Rasayana* is subdivided into ***Pranakamiya, Srikamiya and Medhakamiya Rasayanas***. i.e., to increase the life span, to prolong the life span and to increase the cognitive abilities of mind respectively.
- *Naimittika* type of *Rasayana* is nothing but *Rasayana* specific to a disease.

"Naimittikam Vyadhinimittam"

- *Ajasrika Rasayana* deals with daily intake of milk, ghee, etc. *Rasayana* so as to promote the body immunity.

"Ajasrikam Ksiraghrtabhyasadikam"

- Another two types of *Rasayana* mentioned by *Dalhana* based on their mode of action.
- ***Samsodhana - 'Dosasya Samsodhanadi Samsodhanam'***
- ***Samsamana - 'Samsamanam Nagabaladi Prayogadikam'***

Samsodhana and *Samsamana*, both are curative in nature. *Samsodhana* type of *Rasayana* expels the aggravated *Dosas* whereas *Samsamana* type pacifies the accumulated ones.

- *Susruta* has classified *Rasayana* into four types
 - *Sarvopaghata Samaniya*
 - *Medhayuskamiya*
 - *Svabhavavyadhi Pratishedhaniya*
 - *Nivrtta Santapiya*.

Sarvopaghata Samaniya deals with *Rasayana* to counteract the disease process. ***Medhayuskamiya*** is one by which an individual can increase his intellect and prolong his life. ***Svabhavavyadhi Pratishedhaniya*** is one which delays the onset of *Svabhavika Vyadhis* like *Ksut, Jara, Pipasa, Mrtyu*, etc. and ***Nivrtta Santapiya Rasayana*** rebuilds the physical and mental faculties following their Disturbance due to disease process.

- It can be further classified into five types based on their benefits (Ca.Su.4)
 - *Dirghayuskara* - *Jivaniya* and *Brmhaniya*
 - *Tarunyakara* - *Vayahsthapana*
 - *Balakara* - *Balya*
 - *Medhakara* - *Medhya*
 - *Rogahara* - *Roganut* (specific to disease)

One more *Rasayana* variety has been mentioned by *Acharya Charakai*.e., ***Acara Rasayana***^[25] or ***Nitya Rasayana*** where in an individual follows *Sadvrta* and *Swasthavrtta* strictly and gets the beneficial effects. Persons who are truthful and free from anger, alcohol and sexual indulgence; who do not indulge in violence and over exercise; who are peaceful and pleasing in speech, who practice *Japa*, *Tapa*, cleanliness, charity; who are stable and steady; who regularly offer prayers to Gods, cows, *brahmanas*, teachers, preceptors and aged people; who are compassionate and merciful; who go to sleep and awake at regular time; who habitually take ghee and milk; who are experts in the knowledge of rationality; who are free from ego; whose conduct is good; who are not narrow minded; who love spiritual knowledge; who have excellent sense organs, respect for elders; who believe in the existence of Gods; who have self-control and who regularly study *Dharmasastras* will get best out of rejuvenation therapy. If persons endowed with these qualities practise rejuvenation therapy, they get all the rejuvenation effects described above. In *Manusmrti*, it has been stated that -

आचाराल्लभतेहयायुःआचारदीप्सिताःप्रजाः।

आचाराद्धनमक्षय्यमाचारोहन्त्यलक्षणम्।।

Following an *Acara* makes the individual live a long and happy life. By *Acara Rasayana* one can keep away the occurrence of ailments and prevent the onset of many fearsome diseases arising due to *Prajnaparadha*, *Asatmyendriyarthasamyoga* and *Parinama*.

Utility of *Rasayana*^[26]

An ideal *Rasayana* prolongs life, improves memory and intellect, promotes health, and provides immunity against diseases thereby helps an individual to lead an energetic life. It improves lustre and complexion of the body, tones the voice and speech, and increases the acuity of all the sensory and motor organs, vitality and vigour.

नजरांनचदौर्बल्यं नातुर्यनिधनं न च

जग्मुर्वर्षसहस्रत्रणिरसायनपराःपुरा

नकेवलं दीर्घमिहायुरश्नुते रसायनं यो विधि वन्निषेवते

गतिं स देवर्षिर्निषेवितां शुभां प्रपद्यते ब्रह्मतथेति चाक्षयम्

Rasayana keeps away *Jara*; removes *Daurbalya*; cures diseases and overcomes even *Mrtyu* and person lives for thousand years. The individual not only gets his life span prolonged but also attains salvation.

In *Astanga Samgraha* and later classics, instead of *Pranati*, *Vrsata* was mentioned i.e., *Rasayana* can also impart *Vrsya* properties.^[27]

By *Rasayana*, the *Syama* (dark) complexion can be turned into *Gaura* (fair) complexion and its withdrawal causes the other way.

Rasayana wards off old age, cures diseases, prolongs life span, gives strength to *Caksuradi* *Indriyas*, improves immunity against diseases and acts also as *Vrsya*. With the help of *Rasayana*, *Japa*, *Tapa* and *Yoga*, one can overcome even death.

Rasayana, *Tapa* etc. will cure, with their *Prabhava* etc., the diseases which are considered incurable.

The diseases which had shown even the imminent signs of death can be superseded by the administration of *Rasayana* or by performing *Japa*, *Tapa* etc.

By undergoing *Rasayana*, the ailments arising as a result of *Viruddhasana* can be overcome.

While explaining *Janapadoddhwamsa Vyadhis*, *Caraka* has given that by *Rasayana*, one can prevent the onset of *Maraka Vyadhis*.^[28]

In *Charaka Samhita*, benefits of *Rasayana* described as *Balya*, *Jivaniya*, *Brahmaniya* and *Vayahsthapana*.^[29]

Dalhanas define *Vardhakaas* which increases, *Sthapakaas* which stabilises and *Apraptaprapakaas* which gives additional endowments.^[30]

So, here *Vardhaka* is nothing but *Ayurvardhaka* i.e., prolongation of lifespan. *Sthapaka* stabilises the youth of an individual by improving healthy status and increasing body immunity against ailments. *Apraptaprapaka* means fulfilling the nourishment needed thereby increasing body tissue elements resulting in increased immunity and person will be endowed with additional features. All these three here serve the purpose of *Swasthyaraksana*. Most of the *Rasayana Dravyas* have either *Madhura Rasa* or *Madhura Vipaka* (Ca. Su. 26/43-1). Such drugs when used give benefits to the body in the form of -

- Increasing *Rasa*, *Rudhira*, *Mamsa*, *Meda*, *Asthi*, *Majja*, *Ojas* and *Sukra*.
- Increasing longevity.
- Soothes six sense organs
- Promotes strength and complexion
- Improves the integument
- Promotes healthy hairs
- Improves voice
- Increase strength
- Soothes
- Invigorates
- Nourishes
- Promotes body mass
- Gives stability to the body.

From the foregoing lines, it is observed that majority of *Rasayana Dravyas* has prophylactic property improving the immunity of the body and in turn lengthening the life span. One can get ample references regarding curative effects of *Rasayana* in the classics along with their health promoting effects. Some of them are *Aindra Rasayana*, *Pippali Rasayana*, *Bhallataka Rasayana* (in *Kustha*, *Arsas*), *Ayo Rasayana* (in *Mahakustha*), *Tuvaraka Rasayana* (in *Madhumeha*), *Somaraji Kalpa*^[31] (in *Kustha*), *Lasuna Kalpa* (in *Vatavyadhi*), *Guggulu Kalpa*, *Silajatu Kalpa*, *Vrddhadaru Kalpa*, *Sarpirguda* (in *Ksataksina*), *Yogaraja* (in *Pandu*), etc.

When to start Rasayana?

Acarya Caraka did not specify to whom or at what age *Rasayana* should be administered to an individual. But, *Susruta*, *Vagbhata* and later *Acaryas* have considered this factor. *Susruta* and

followers have mentioned that *Rasayana* should be given either in *Purva Vayas* or in *Madhya Vayas*.

पूर्ववयसिमध्येवापुरुषस्यरसायनम्^[32]

Arunadatta commenting on the same quotation mentioned by *Vagbhata* says that – पुरुषस्याध्येवयसिअतिबाल्यातिक्रान्तमात्रे^[33] i.e., the period after crossing the phase of childhood.

'*Kairali*' commentary of *Astanga Hridaya* opines that -

पूर्ववयसिआध्यवयसि, अतिबाल्येअतिक्रान्तइत्यर्थ.....वाअथवामध्येवयसियौवने,
बाल्येवार्द्धक्ययोःतन्निषेधत्वदितिभावः.....

Purva Vayas means the stage that appears after childhood and *Madhya Vayas* is early adulthood and he says that in *Balya* and *Vardhakya*, *Rasayana* is not advised.

Sivadasasena opines in his commentary that

पूर्वइत्यादौपूर्वइतियौवनप्रवेशेएवमध्येइतियौवनशेषे^[34]

Purva Vayas is not *Balyavastha*, but that phase of life wherein an individual reaches or enters *Yauvana* (youth) and *Madhya Vayas* is the remaining period of *Yauvana*.

Yauvana, according to *Susruta* lies between twenty and thirty years of life.^[35] *Cakrapani*, commenting on this says that '*Yauvane Managvardhamanata*' i.e., there will be little or slow growth of the body. *Caraka* also agrees with this by saying that total growth and development will be incomplete upto thirty years. So, *Rasayana* administered during the earlier phase of *Yauvana* can increase the nourishment to all *Dhatus* thereby improving the defence system of body.

'*Yauvana Sese*' is considered to be *Madhya Vayas*. This phase of life is endowed with complete growth and development of all body tissues as well as total functioning of mental faculties. The individual will be having good strength and there will be no deterioration of tissue elements. In such a stage, *Rasayana* administered can boost the immune system and delay the ageing process.

Whether Rasayana is Contraindicated to Bala and Vrddha?

In *Bala*, all *Dhatus* will be in developing stage and *Bala* will be *Sukumara* (tender), *Aklesasaha* (cannot bear any stress), *Asampurna Bala* (less body strength). *Ajatavyanjana* (unestablished body functions). The quantity of food and dose of medicine were increased yearly so as to make the child's digestive system adapt to normal adult quantity / dosage. If *Rasayana* is given to children, then they will not be in a position to cope with the potency of drug.

Rasayana will be of no use in old aged persons because of deterioration of body tissue. This was fully supported by *Susruta* i.e.,

सएवअन्नरसोवृद्धानांजरापक्वशरीरत्वात्तनप्रीणनोभवति^[36]

Dalhana commenting on this says that nourishment to *Dhatus* will be minimum in old age and it just supports the life. No *Acaryas* have told that *Rasayana* should not be given in *Vrddhavastha*. But it is clearly understood that *Vrddhavastha* is not the proper age for the administration of *Rasayana* because after sixty years naturally there occurs the decline of body functions. As a result, the assimilation, absorption and movement of essence to all *Dhatus* get diminished leading to incomplete achievement of the desired effect. Moreover, the definition "*Yajjaravyadhividhwamsi*", where *Jara* means not *Kalaja Jara*, but *Akalaja Jara*. In *Akalaja Jara*, one can revert the process by *Rasayana* which is clearly told by our *Acaryas*. But no reference is found that *Rasayana* stops *Kalaja Jara*. (It is similar to the concept that administration of growth hormone does not cause further growth after the closure of epiphyseal ends of bones). Once *Kalaja Jara* which is *Svabhavika* (natural phenomenon) sets in, then there is no question of stopping or reversing it because catabolic rate already has taken the upper hand. Hence, *Vrddhavastha* does not get the fruitful effects of *Rasayana*. Then one may question how the Sage *Cyavana* was turned from old to young. *Sivadasasena* once again clarified it by saying that effect was not only because of *Rasayana* but also because of continuous penance along with *Rasayana*. Another factor which can be the cause for minimal effect of *Rasayana* is the presence of *Virodhaka Bhava* and because of these, in old age, *Rasayana Dravya* does not render the essence necessary for all *Dhatus* thereby reduces the formation of *Prasasta Dhatu*.

Sodhana is generally conducted before the administration of *Rasayana* in all individuals. All *Acaryas* agree with the point that *Sodhana* is contraindicated in *Bala* as well as in *Vrddha*,

because *Sodhana* results in *Ksaya* of *Dhatu*s, *Agni* and *Deha Bala* which is usually restored by *Samsarjana Krama*. In almost all occasions, *Sodhana* is performed using the drugs having properties like *Katu - Tikta Rasa*, *Usna Virya*, *Usna - Laghu Guna* and *Usna Vipaka*. *Balyavastha*, dominated by *Kapha*, most essential for the anabolic activity or *Dhatu Vrddhi*, is having the properties exactly opposite to those mentioned above. So, they counteract the activity of *Kapha* thereby slows down the process of anabolism. On the other hand, *Vrddhavastha*, dominated by *Vata* is having the properties similar to the above mentioned ones. So, they catalyse the activity of *Vata* resulting in increase in the process of catabolism. In *Balyavastha*, there will be development of *Dhatu*s and *Agni* will not be functioning to its optimum. So, *Sodhana* leads to destabilization of whole body functions and derangement in *Agni*, eventually hampering *Dhatu Vrddhi* or *Upacaya* of *Dhatu*s. Once *Upacaya* of *Dhatu*s gets stopped or reduced, then complete development of whole body cannot be expected. In *Vrddhavastha*, all *Dhatu*s will deteriorate progressively. Naturally, there will be less strength and there is dominance of *Vata* as well. Administration of *Sodhana* leads to further decrease in *Dhatu*s and *Vata* gets increased which in turn, affects the *Dhatu*s further as *Vata* contributes largely for the occurrence of *Dhatu Ksaya*. Hence, in *Balya* and *Vrddhavastha*, *Rasayana* given to the individuals after *Sodhana* will not definitely give the desired effects.

Rasayana Vidhi

Two varieties of *Rasayana* have been mentioned based on the mode of administration. They are

(a) *Kutipravesika*

(b) *Vatatapika*

Kutipravesika is done with persons taking *Rasayana* inside a specially constructed *Kuti*^[37] and *Vatatapika* is administered with individuals exposed to *Vata* and *Atapa*.

Before *Rasayana*, person should be administered with *Samsodhana* and *Samsarjana Krama*.^[38]

Administration of selected *Rasayana* to the particular person is the unique concept of *Ayurveda* considering each and every factors of an individual i.e. *Vayas*, *Prakruti*, *Agni*, *Satmya* etc. And some *Rasayanas* are used in particular way like *Vardhamana Pippali Rasayana* – in this *Rasayana* individual should start with single *Pippali* and in next 10

consecutive days he has to increase one *Pippali* each day and after 10 days he has to decrease one *Pippali* in same manner. Same method is to be followed for *Bhallataka rasayana*. Another example of different method to intake *Rasayana* is *Ritu-Haritaki*. In this *Rasayana*, *haritaki* is to be taken with different adjuvants according to the season. *Acharya Charaka* has mentioned four *Medhya Rasayana*^[39] in *chikitsasthana* i.e. *Swarasa* of *Mandukparni* and *Guduchi*, *Yashtimadhu Churna*, *Shankhapushpi kalka* also showing that particular part of the drug having specific action.

Acharya Sharangdhara has mentioned loss of impact desired effect in each decade of life and he has described *Rasayana* drugs for each of them i.e.

Decade of life	Loss of impact desired effect	Desirable <i>Rasayanas</i>
1 st	<i>Balya</i>	<i>Vacha, Swarna</i>
2 nd	<i>Vruddhi</i>	<i>Kashmari, Bala</i>
3 rd	<i>Chhabi</i>	<i>Amalaki, Lauha</i>
4 th	<i>Medha</i>	<i>Shankhapushpi</i>
5 th	<i>Tvak</i>	<i>Jyotishmati</i>
6 th	<i>Drashti</i>	<i>Jyotishmati</i>
7 th	<i>Shukra</i>	<i>Atmagupta, Aswagandha</i>
8 th	<i>Vikrama</i>	<i>Rasayana may not be effective</i>
9 th	<i>Buddhi</i>	<i>Rasayana may not be effective</i>

Why *Sodhana* is must prior to *Rasayana*?

If *Rasayana* is administered without *Sodhana* then it will be of no use just like colouring a garment which is unclean or stained cannot be appreciated.

नाविशुद्धशरीरस्ययुक्तोरासायनोविधिः

नभातिवाससिक्लिष्टेरंगयोगइवाहितः^[40]

Factors to be avoided during *Rasayana*^[41]

Aharaja

- Substandard diet
- Sour, salty, pungent and alkali
- Dry vegetables and meat
- Derivatives of Sesame
- Germinated cereals and pulses, freshly harvested
- Contradictory, unwholesome, dry, Abhisyandi food
- Softened, heavy, putrid and stale food

- Irregular food intake and food taken before the digestion of earlier food
- Alcoholic drinks

Viharaja

- Day sleep
- Regular sexual intercourse
- Irregular and excessive exercise

Manasika

- Excess fear, anger, grief, greed and infatuation.

If these were followed, then the muscles become flabby, joints become loose, blood becomes afflicted and fat gets liquefied. In such persons, marrow does not remain intact inside the bones, there occurs impairment in the ejaculation of semen and *Ojas* gets diminished. In such circumstances, person feels exhausted, languid and falls victim to excess sleep, drowsiness and laziness. He loses enthusiasm, incapable of physical and mental work. He loses memory, intellect and complexion and becomes an abode of diseases. Thus, he fails to enjoy the full span of his life.

Contra Indications for *Rasayana*^[42]

Rasayana should not be administered to following seven persons.

- Intemperate
- Lazy
- Poor
- Careless
- Immoral
- Sinful
- Who disregard medicines

If administered, *Rasayana* will give no beneficial effect because of following respective reasons. They are -

- Ignorance
- Non commencement of the treatment
- Poverty
- Instability of the mind

- Depending on others
- Non righteous deeds
- Inability to secure the genuine drug.

Probable Mode of Action

Action on *Rasa*

Action on *Agni*

Action on *Srotasa*

Action on *Rasa-dhatu* is mentioned by definition of *Rasayana* that by *Rasayana*, a person can get maximum essence of all *Dhatus* by proper circulation of *Rasa* to all *Dhatus*.

Agni plays a vital role in procuring the desired effects of *Rasayana*. Caraka^[43] says that *Jatharagni* (Dehagni) is the base for *Ayu* (longevity), *Varna*(complexion), *Bala* (strength), *Arogya* (positive health), *Prana* (elan vital), *Utsaaha*(enthusiasm), *Upacaya* (anabolism), *Prabha* (lustre), *Agnis* (Dhatvagnis), *Ojas* and *Tejas* (energy). He further stated that if *Agni* becomes destroyed then the individual loses all the mentioned features; if normal, lives longer without any ailment and if impaired (either of *Manda*, *Visama*, and *Tikсна*) then becomes diseased. Hence, everything is dependent on *Agni*. The same has been quoted in *Sutrasthana* as -

बलमारोग्यायुश्चप्राणाश्चाग्नौप्रतिष्ठिताः^[44]

Though *Ahara* is the root for every living being, it still depends on *Agni*. Any substance, either *Ahara* or *Ausadha* passes through the same stages of *Avasthapaka*. They first come in contact with *Jatharagni* and then with respective *Bhutagnis* and *Dhatvagnis*. The digestion of food by *Jathargani* results in the breakdown of food into five distinct physico-chemical groups viz. *Parthiva*, *Apya*, *Taijasa*, *Vayaviya* and *Nabhasa*. *Jatharagni* is stated to ignite the *Agni* present in each of these and the respective *Agni* digests the substances of that group.^[45] This renders food substances fit for being assimilated into the substances present in the *Dhatus* after they have been subjected to the action of *Dhatvagnis*. Caraka has quoted in *Sutrasthana* 28/3 that wholesome foodstuff ingested in four fold manner, having been digested by *Antaragni*, is followed by further *Paka* under the influence of *Bhutagni*. They are subjected to further *Pakas*, by *Dhatvagnis*, subject to the condition that *Dhatu* *ma*, *Dhatuvaha* *Srotamsi* and *Maruta* are not impaired and *Dhatu Paka* is proceeded with

inexorable *Kala*. *Dhatvaharas* thus formed confer upon the organism strength, complexion, happiness, longevity and provide energy to *Dhatus*. Commenting on this *Cakrapani* says that *Rasadi Dhatus* which are always destroyed are being replaced by *Dhatvaharas*, derived from the four kinds of nutrition ingested. In his view, the *Rasadi Dhatus* are lost in catabolic processes and such losses are made good by anabolic events. He further stated that *Sarira Dhatus* which are destroyed by their own *Agnis* are replenished by four kinds of food ingested.

Foregoing lines showed how *Agni* is responsible for everything. All the positive aspects of life are endowed only when *Agni* functions normally.^[46] Because of *Samagni*, digestion takes place properly forming *Sara* and *Kitta*. *Saramsa* nourishes all *Dhatus* and *Pancendriya Dravyas* while *Kittamsa*, all *Malas* like *Sveda*, *Mutra*, *Purisa*, *Vata*, *Pitta*, *Kapha* etc. This *Sara Kitta Vibhajana* and further, nourishment has been explained in the form of three different *Nyayas* by our *Acaryas* such as *Ksira Dadhi (Sarvatma Parinama)*, *Kedara Kulya* and *Khale Kapota Nyayas*.

Thus, *Jatharagni* renders support to *Bhutagnis* and *Dhatvagnis* to carry out their action properly. Hence, *Agnis* (all the thirteen) should function normally so as to get maximum benefits of either *Ahara Rasa* or *Bhaisajya* like *Rasayana Dravyas*.

Srotas, the body channel which carries the metabolites to different tissues of the body also provide much to the effects of *Rasayana*. In childhood, whole body structures including tissue elements are not fully formed and *Srotas* are not fully distinct. So, the essence of ingested substances may not reach their minutest targets. In *Jaravastha*, all the tissue elements including *Srotas* become weak functionally. Formation of atheromatous plaque within and hardening of *Srotas* in old age is quite common resulting in reduction in elasticity. Due to this, *Sara* will not be propelled further towards the tissue elements depriving them of their requirements. To sum up, the whole *Sarira* of an individual will not get the effects of *Rasayana* to its optimum in *Balyavastha* and *Jaravastha* for the aforesaid views and maximum benefits can be observed in *Madhyamavastha*.

Modern Explanation regarding Pharmacological Activities of *Rasayanadrugs*^[47]: In the light of the modern medical science, many scientists are trying to find out the logics for the possible explanation regarding the pharmacology of *Rasayana* drugs. On the basis of various researches following mode of action can be considered for the explanation of *Rasayana* effect of herbal drugs.

- Antioxidant
- Adaptogen
- Immuno modulator

Anti Oxidant

Free radicals are fundamental to any biochemical process and represent an essential part of aerobic life and our metabolism. They are continuously produced by the body's normal use of oxygen such as respiration and some cell mediated immune functions. They are also found or generated through radiation- Radiotherapy. However, the amount of these protective antioxidant principles present under the normal physiological conditions are sufficient only to cope with the physiological rate of free radical generation. It is obvious, therefore that any additional burden of free radicals either from Radiotherapy like external cause or produce within the body can lead to imbalance the free radical (pro-oxidant) and anti-free-radical (antioxidant) leading to oxidative stress, which may result in tissue injury and subsequent adverse condition. Research in the recent past has accumulated growing body of evidences to show that enrichment of body systems with natural antioxidant principles may correct the vitiated homeostasis [Tiwari AK *et.al.*, 1999; Keaney *et.al.*, 1999; Ley *et.al.*, 1987]. Flavonoids as antioxidant having multiple properties of these phytochemicals made them more attractive, as they can modulate various aspect of disease like lipid peroxidation involved in cytokine release in normal cell with use of chemotherapeutic agents in cancer management. Flavonoids release H_2O_2 by donating a hydrogen atom from their pyrogallol or catechol structure to oxygen level of enzymatic antioxidants like catalase and other H_2O_2 removing enzymes preventive role of these flavonoids is due to a variety of constituents including numerous photochemical including flavonoids. Thus it is possible that flavonoids also contribute to the cyto-protective effect to normal cell. The holistic therapeutic effect of medical antioxidants which can be given through oral route may be observed as they can display their first antioxidant defense in digestive tract by limiting reactive oxygen species formation and scavenging them and may impart anti-ulcer activity [Tarnawski *et.al.*, 2000]. Further once absorbed, either as aglycons or glycosides [Hollman *et.al.*, 1998] or to a larger extent as phenolic acids, they continue to exert antioxidant effect along with other systemic activities. One of the main purposes of antioxidant therapy is to reduce target site inflammation induced by oxidative stress.

Antioxidants are ubiquitous in natural medicinal plants. The great variation in their magnitude as well as multitude at activities may even become more important for protective effects in situations. Whereas free radical species are not directly involved in the disease process, but may participate or foster the secondary events.

Adaptogen

The concept of 'Adaptogen' was coined in 1947 by a Russian Scientist, Lazarev. He defined them as *"substances meant to put the organism into a state of nonspecific heightened resistance in order to resist stresses and adapt to extraordinary challenges"*.

In general, adaptogens are a group of medically effective substances that normalise body functions, strengthen systems and functions compromised by stress and have a protective effect against a wide variety of environmental and emotional stresses.

General Adaptive Syndrome (GAS), formulated by Selye is a consistent, nonspecific response of the organism to stressful influences of totally diverse types, the adaptive reaction enables the body to heighten its power or resistance towards stresses, and to adapt to external conditions.

Though difficult to differentiate adaptogenic effect from other remedies of related action, there are number of criteria which allow a formal arrangement of these other drugs in immunostimulants, nootropics, anabolics, tonics and geriatric acids. Rasayana is certainly having any one or more of these activities. *Immune stimulants* are substances which bring about a heightened resistance through the stimulation of non specific defensive processes which are largely independent of antigens.

Nootropics (cognition enhancers) are effective psychopharmacological agents which are said to improve the higher integrative brain functions, such as memory, learning, understanding, thinking and the capacity for concentration. No specific mechanisms are known. It is assumed that nootropics stimulate existing neural synapses to optimum performance (adaptive capacity) and also for damaging influences, such as disturbances of the energy and neurotransmitter metabolism or ischaemia (protective capacity).

Anabolics are substances which activate the anabolic metabolism. They promote the synthesis of nucleic acids and protein metabolism, thereby in general, growth.

Tonics and geriatric remedies fall into the category of wellness enhancers. Though a precise conceptual definition can not be given for both, *tonics* are defined in a very generalized way as substances which mitigate conditions of weakness or lack of tone within the entire organism, or in particular organs. Being adaptogenic, like all the others, generally, adaptogens raise one's capacity, therefore may also be included by the group of tonics.

Geriatric remedies are substances serving as a preventive treatment of old age diseases. Stiffness and age conditioned rigidity are possibly the outer manifestations of diminished or lacking ability to adapt.

Brekhman, in 1958, summarised the concept adaptogen as follows:

- It must show a nonspecific effect (raising the power of resistance to toxins of a physical, chemical or biological nature).
- It is to normalise, independent of the type of pathological condition.
- It must be harmless and disturb the body functions as little as possible.

Accordingly, adaptogens are to strengthen the nonspecific powers of resistance to noninfectious stresses, raise the general performance capacity during stress situations and thereby prevent diseases that could develop due to over stressing the organism.

It is seen as characteristic of adaptogens that their anti stress effect towards stresses of a noninfectious variety, always stands in the foreground. Although in so called adaptogens, immune stimulating, nootropic or metabolic effects have also been proved.

By going through the aforesaid pages, it is certain that adaptogens show the similar qualities of Rasayana i.e., Dhaturvrdhikara, Medhya, Pustikara, Balada, Dehendriya Drdhikarana, Brmhaniya, Jivaniya, etc. and thus help improve body's defense system.

Immuno modulator

Immuno-modulation or immuno potentiatio is a phenomenon in which enhance of the resistance against the invading organisms responsible for diseases are seen. Immunomodulatory substances of varying chemical structures and molecular sized in Rasayana drugs, which exert that effect by modulating several facts of the immune system such as activation of macrophages for enhanced generation, oxygen radical and stimulation of cytotoxic activity and phagocytosis, proliferation of lymphocytes leading to production and cytotoxic induction of T helper and natural killer cell and activation of complement.

pathway Immuno-stimulant after promise in enhancing antigen specific and nonspecific immune response in normal cell injury during radiotherapy or cytotoxic chemotherapeutic medication and potentiating the efficacy of drugs immuno compromised host much more could be achieved by Indian scientist in the field of *Rasayana* therapy.

CONCLUSION

रसायनतंत्रनामवयःस्थापनमायुर्मेधाबलकरोगापहरणसमर्थच II

Rasayana Tantra is one which deals with delaying of ageing process, increasing of intellect and strength, prolongation of life and curing of disorders.

Though chiefly concerned with improving the healthy status, *Rasayana* is used as curative. Thus, it serves the dual purpose of eradicating the ailments and keeping them away thereby promoting and prolonging the life span. As quoted by *Acharya Charaka* in first chapter of *Chikitsa Sthana*.

It means the therapy which is useful to improve the healthy status of an individual and also to eradicate the diseased condition is called *Vrushya* and *Rasayana chikitsa*.

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