



### Physiological study of *doshas* in *dincharya* and *ritucharya*

#### W.S.R. biological clock

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#### Abstract:-

According to *ayurveda* biological clock organizes your entire day as per the *Ayurvedic* clock. Every day, human body cycles through three *doshas*-*Vata*, *Pitta* and *Kapha*. One *dosha* is dominant at one particular time. Thus, tuning the body as per the qualities and timings of *doshas* can ensure harmony in life. According to *Ayurvedic* concepts, body is made up of three types of *Doshas*, viz. *Vata*, *Pitta*, *Kapha*. Balancing between *Doshas* leads to health whereas the imbalance leads to disease condition. At specific time in each day, or seasons or at given age the balance between *Tridosha* is in constant flux. Balancing of *Doshas* is possible with '*Dinacharya*' and '*Ritucharya*', which will lead to syncing of the inner biological clock. Thus, the lifestyle disorders could be managed with changes in the lifestyle with

least medical intervention. *Rhythmicity* is a ubiquitous phenomenon. Rhythmic temporal patterns are considered and important factor in therapeutics as effective treatments should work in conjunction with body's clocks. The concept of chronobiology is well evidenced by the cyclic alterations of *dosas* in the body. The *Ayurvedic* way of living as well as healing has been developed keeping in mind these biological clocks so as to maintain a balanced state of *dosas* in the present paper an attempt is made to review the *ayurvedic* concept of chronobiology and chronotherapy. Circadian rhythm is the cyclical 24-hour period of human biological activity. Within the circadian (24-hour) cycle, a person usually sleeps approximately 8 hours and stays awake for 16 hours. During the wakeful hours, mental and physical functions are most active and tissue cell growth increases. During sleep, voluntary muscle activities nearly disappear

and there is a decrease in metabolic rate, respiration, heart rate, body temperature, and blood pressure. In *Ayurveda*, this concept is based on three *Doshas*- *Vata*, *Pitta*, *Kapha* - which predominantly govern our daily routine life. These *Doshas* maintain the integrity of our body by creating, assimilating & diffusing strength. In this article, efforts will be made to correlate the *Doshic* influence which affects the human body.

**Keywords:-***Doshas, Ayurveda, Dinacharya, Ritucharya, chronobiology.*

### **Introduction:-**

Circadian rhythm is a roughly 24-hour cycle in the biochemical, physiological, or behavioral processes of living entities on Earth, including plants, animals, fungi and cyanobacteria. The term "circadian" comes from the Latin *circa*, "around", and *Diem* or *dies*, "day", meaning literally "approximately one day". The formal study of biological temporal rhythms such as daily, tidal, weekly, seasonal, and annual rhythms is called chronobiology. Concept of *Ayurvedic* physiology and pathology is based on circadian rhythm of three '*Doshas*'. These *doshas* governs the integrity of our body by engendering, assimilating & diffusing vigor, in the same way as *soma*, *surya* & *anila* – maintain the integrity of the terrestrial world- as told by *Sushruta*.

The three *doshas* –*Vata*, *Pitta* & *Kapha* follows a circadian rhythm and by this rhythm all the metabolic functions of the body are regulated. Disruption in this rhythm leads to production of various pathological states. Beside daily circadian rhythm these

*doshas* also follow circannual rhythm i.e. a particular pattern is followed in relation to different season in a year. These *doshas* follow yearly cycle by the process of their *Sanchaya*, *Prakopa* & *Shamana* for regulating the biochemical, physiological or behavioral processes of our body. These *doshas* maintain our physiological process according to our internal environment & it is withal influenced by our external environment. Beside this changes in *doshas* is also seen with the change in age e.g. *Kapha* is said to be dominant in *Balyaavastha* (Pediatric age), *Pitta* in *Madhya-avastha* (middle age) and *Vata* in *Vridhnavastha* (old age). These *doshas* become ascendant respectively according to *vaya* (age), *kaal* (time) & during digestive process, as described by *Vagbhata*. *Ayurvedic* chronobiology in context to circadian rhythm of three *Doshas* Seasonal variation also affects rhythm of *Doshas* and it is seen in various states like *Sanchayavastha* (Stage of Accumulation), *Prakopavastha* (Stage of Aggravation) and *Prasamavastha* (Stage of suppression of vitiated *doshas*). Cycle or rhythm is maintained by the predominance of these three *doshas* & affects our *balas* (strength) which is incremented or decremented during *adana* & *visarga kaal* (seasons) as stated by *Sushruta* and *Madhukosha* commented on this regulation. *Ayurveda* has told specific regime of diet and life-style to cope up with this seasonal variations. Such code of conduct related to seasonal variation is known as *Ritucharya*. Similar code of conduct '*Dinacharya*' is also given for diurnal variation mentioned above.

The concept of chronobiology is inherent in *Ayurveda*. All the rhythms circadian, circamensual and circannual are recognized in *dosas*, both qualitatively and quantitatively. Inflect circannual rhythms are seen as extension of circadian rhythms, as *susruta* says-that in a day and night also one should observe in forenoon the features of spring, in mid-day those of summer, in afternoon those of earl rains, in earl night those of rainy season, in mid night those of autumn and at down those of earl winter. As the orbit of earth around the sun is elliptical, the year has been broadly divided into two-Adana Kala when the earth is nearer to the sun and the period during which the earth is further way from the sun is said to be *visarga* Kala. The nature of these two semesters are opposite of one another. Northern solstice being hot and dry and southern solstice is colder with predominance of *apa mahabhuta*. Whole year as been divided into six seasons of two months each. Seasonal changes are a form of stress on organisms, frequently as 'Lack stresses'. Thus are winters organisms are deprived of radiant energy of sun while

water is lacking during northern solstice. *Dosas* vary cyclically to keep pace with seasonal changes. Altered chronobiology manifested as vitiated *dosas* because of change of seasons or altered habits does decrease the performance, that's why *Ayurveda* suggests avoidance of *sahasa* (stress) and observance of regular habits in the form of *dinacarya*. Vitiating of *dosas* in different seasons usually does not rise to diseases. However if the body is already weakened due to some other reason or *ritucarya* is not followed properly, the vitiated *dosas* may give rise to various diseases phenomenon very similar in concept to chronopathology. This is well illustrated by cyclical convulsions of *apasmara* (epilepsy). Thus convulsions occur on ever twelfth day in vatic, fortnightly in paittic and monthly in *kaphaja apasmara*. Circadian rhythms for epileptic seizures have been demonstrated a century back and possible explanations are based on rhythmic variations in concentrations of various neurotransmitters.

#### Material and methods:-

- Relation of *dosas* and age, body, day & night and stage of digestion:-

No.	Relations	VATA	PITTA	KAPHA
1	Age	Old age	Young age	Childhood
2	Stage of Digestion	<i>Pakvavastha</i> (end stage of digestion )	<i>Vidagdavastha</i> (mid stage of digestion)	<i>Amavastha</i> (Initial stage of digestion)
3	Night	<i>Ratri ke antim parhr</i>	<i>Ratri ke madhaya parhr</i>	<i>Ratri ke partham parhr</i>
4	Day	<i>Prata kala</i>	<i>Madhaya kala</i>	<i>Saya kala</i>
5	Body	Below umbilicus	Between umbilicus & heart	Above heart

- Relation of *ritu and bala*:-

<i>Ritu</i>	<i>Bala</i>
<i>Grisma and varsa</i>	<i>Hina bala</i> (debility)
<i>Vasanta and Sarada</i>	<i>Madhyabala</i> (Medium Strength)
<i>Sisira and Hemanta</i>	<i>Srestha bala</i> (Maximum strength)

- Relation of *dosas and ritus*:-

<i>Dosa</i>	<i>Sanchaya</i> (Accumulation)	<i>Parkopa</i> (Aggravation)	<i>Shamn</i> (Pacification)
<i>Vata</i>	<i>Grisma</i>	<i>Varsa</i>	<i>Sarada</i>
<i>Pitta</i>	<i>Varsa</i>	<i>Sarada</i>	<i>Hemanta</i>
<i>Kapha</i>	<i>Sisira</i>	<i>Vasanta</i>	<i>Grisma</i>

### Discussion:-

In *Ayurveda*, all physiological and pathological phenomena depend on delicate balance of *dosas* and to precisely regulate *dosic* biological clocks adjustments are made in the form of *dinacarya* and *ritucarya*. The concept of *ritucarya* implies dietetics, habits and behavioral adjustments to seasonal changes. *Ritucarya* aims at health maintenance in all seasons through a balanced state of *dosas* i.e. *dosas samya*. A balanced (and well adjusted) diet is the prerequisites for maintaining the optimum state of *dosas*. Dietary substances are chosen on the basis of complementarily, i.e dietary substance with properties similar to vitiated *dosas* are avoided while choosing the contrary.

### Conclusion:-

On the substructure of above mentioned facts it could be concluded that three *doshas* govern our biological clock. If they are in their mundane state circadian rhythm of body works congruously, any impairment in

these *doshas* can lead to pathology. These *doshas* maintain our circadian body physiology i.e. early morning awaking, hunger, thirst, body vigor, slumber etc. Thus it can be concluded that everybody has their own circadian rhythm or biological clock according which we work and any derangement in the homeostasis of *doshas* can alter this biological rhythm.

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