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# Role of *Dinacharya* to maintain Circadian Rhythm for Cell Rejuvenation - A Review

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## ABSTRACT

In this era, people want to stay healthy and live long lives. To achieve this, they should follow proper *Dinacharya*, *Nishicharya*, and a proper diet. Those who follow *Dinacharya* can stay healthy and strong. *Dinacharya* is a concept in Ayurveda, explained by different Acharyas. It helps achieve *Swastya* by maintaining the body's circadian rhythm, controlled by the hypothalamus, and regulating biological rhythms. *Dinacharya* includes practices such as *Prathakalottana*, *Danta Dhavana*, *Jivha Nirlekhana*, *Abhyanga*, *Nasya*, *Anjana*, *Vyayama*, and more. Circadian rhythm is a physiological function regulated by the brain, typically on a 24-hour cycle. Those who follow proper *Dinacharya* maintain a healthy circadian rhythm and live healthier lives without diseases. Although aging is a natural process that cannot be stopped, it can be slowed down. Ayurveda offers concepts like *Rasayana*, *Abhyanga*, and *Udvardana* to delay early ageing. Modern science also supports therapeutic massage for cell rejuvenation. On this earth the person will grow and become aged. Ageing is a natural process which cannot be stopped but it can be slow down. To achieve this our *Acharyas* have explained some of the concepts. By following these we can achieve delay of early ageing.

**Key words:** *Dinacharya*, *Nishicharya*, *Ratricharya*, *Circadian Rhythm*, *Zeigerber*, *Massage*.

## INTRODUCTION

The aim of Ayurveda is "Swastasya swasta rakshanam aturasya vikara prashamanam cha" - to maintain the health of the healthy individuals and alleviate the diseases of the sick. To achieve this, one should follow *Apta Vakya* (the teachings of the *Acharyas*). In this era, everyone wants to stay healthy and live a long life, and *Dinacharya* is one of the best ways to achieve this.

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Acharya Sushruta defines a healthy person as:

"Samadosha Samagni Cha Samadhatumalakriya Prasannatmendriyamana Swasta Ityabidiyate"<sup>1</sup>

When *Dosha*, *Dhatu*, *Mala*, and *Agni* are in a balanced state, and the sense organs, *Atma*, and mind are in good condition, the person is considered healthy.

For maintaining health, *Dinacharya* plays a crucial role. Various *Acharyas*, including Acharya Charaka, Acharya Sushruta, Acharya Vagbhata, and Acharya Bhavamishra, have elaborated on *Dinacharya*. It is considered a significant concept, with dedicated chapters in texts by Acharya Vagbhata and Acharya Bhavamishra, indicating its importance.

In Ayurveda, *Dinacharya* is a very important concept because Acharya Vagbhata and Acharya Bhavamishra dedicated separate chapters to *Dinacharya*, highlighting its significance. Other Acharyas also explain *Dinacharya* from *Suryodaya* (sunrise) until *Nishi* (night), and specifically, Acharya Bhavamishra

described a specific regimen for *Ahara Sevana* (food intake) and *Nishicharya* (nighttime regimen).

The *Dinacharya* differs from one Acharya to another. The general meaning of *Dinacharya* is derived from “*Dina*,” meaning day or daytime, and “*Charya*,” meaning regimens or duties. Therefore, the general meaning of *Dinacharya* is following the daily duties.

In the Sarvanga Sundara commentary of Ashtanga Hridaya<sup>[2]</sup>, Arunadatta quoted a definition of *Dinacharya* as:

- *Dine Dine Charya Dinacharya*
- *Dinasya Va Charya Dinacharya*
- *Pratidina Karthavya Charya Dinacharya*<sup>[3]</sup>

This means the daily duties or daily regimens done or following the daily regimens. The work that is done daily, following that work daily, is *Dinacharya*.

In Bhavaprakasha, Acharya Bhavamishra says that : A man becomes healthy only when he properly follows *Dinacharya*, *Nishacharya* and *Rutucharya*.

*Dinacharya*, as explained by different *Acharyas*, includes several daily practices, starting from waking up at dawn to going to bed at night. Common practices include *Pratakalottana*, *Danta Dhavana*, *Soucha Vidhi*, *Anjana*, *Nasya*, *Gandusha*, *Jivha Nirlekhana*, *Abhyanga*, *Padabhyanga*, *Udvardana*, *Vyayama*, and *Snana* etc.

According to different *Acharyas*

Astanga	Charaka	Bhavaprakash	Sushruta
Kavala	Dhumapana	Swasya	Mukha Prakshalana
Tambula	Mukha Suganda	Kshoura Karma	Tambula
Sadavrutta	Karna Tarpana	Vastra Dharana	Kesha Prasadana
	Sharira Parimarjana	Pralepa	Parisheka
	Ambara Dharana	Bhojana	Anulepa

	Alankaram	Ratricharya	Mukhalepa
	Chatra Dharana	Nidrayana	Ahara
	Danda Dharana		Nidra

The different *Acharyas* have the different opinions about the *Dinacharya* but all acharyas aim is to have better life and *Swayta Rakshana* (preventing diseases) and to get long lifespan.

The daily regimen is indicated for following reasons.<sup>[4]</sup>

- *Shuchita* (hygiene)
- *Suprasannedriya* (brighten the *Indriya*)
- *Bala Labha* (strength the body)
- *Ayusho Labha* (health and longevity)
- *Soumanasyana* (peace and harmony)

The *Dinacharya* begins by waking up from bed till one goes to bed in the night. The importance of *Dinacharya* are:<sup>[5]</sup>

- Maintenance of normal health
- Maintain of hygiene, & body clean
- Desire for intake of food, proper and easy digestion of the ingested food.
- Prolong the life and longevity.
- Increase the strength of *Indriyas*
- Prevents disease

### Circadian rhythm

The term “circadian” comes from Latin words “circa” (around) and “diem” (day), meaning approximately one day. Circadian rhythm refers to the 24-hour biological cycle regulated by a pacemaker in the brain that sends messages to other body systems.

The first reference to circadian rhythm is found in 13<sup>th</sup>-century Chinese texts. It was first observed by French scientist Jean-Jacques d’Ortous de Mairan in 1729. In 1829, Patrick and Gilbert noted that prolonged sleep deprivation increased sleepiness. In 1994, Joseph

Takahashi discovered the first mammalian CLOCK gene.

Circadian rhythm can be defined as the; A 24 hr biological rhythm Controlled by a Pace maker in the brain that sends message to other system in the body.



### Therapeutic massage for cell Rejuvenation.

First, we must understand what rejuvenation is and how it is explained in Ayurveda. Rejuvenation therapy can be correlated with *Rasayana*. *Rasayana* is an important concept in Ayurveda, comprising two words: “*Rasa*,” meaning fluid, and “*Ayana*,” meaning pathway. *Rasayana* is accepted and explained by all *Acharyas*. It is considered the best therapeutic approach for cell rejuvenation. According to Bhavaprakasha, Acharya Bhavamishra states that *Rasayana* is a medicine that slows down ageing and prevents disease. Under the concept of *Snana* in Bhavaprakasha, Acharya explains that one who uses *Amalaki* on the head will live for hundreds of years without greying of hair or baldness.

Therapeutic massage can be utilized for rejuvenation therapy, specifically *Abhyanga* and *Udvartana*. *Abhyanga* provides strength to all parts of the body, enhances the functioning of the sense organs, and improves complexion. *Udvartana*, on the other hand, reduces *Medho Dhatu* (fat tissue) and increases physical strength.

*Rasayana* can be correlated with gerontology, this term is derived from the Greek word, meaning “old man.” It was introduced by Ilya Ilyich Mechnikov. Gerontology is defined as the scientific study of old

age, the aging process, and the particular problems faced by elderly individuals.

### Description

The *Dinacharya* is one of the ancient Ayurvedic topic which is told by the our acharyas, the *Dinacharya* is daily routine and which helps in the maintenance of health. *Dine Dine Charya Dinacharya* or *Dine Va Charya Dinacharya* means following the daily routines is called *Dinacharya*. For the healthy life we must follow the *Dinacharya*.

In the other way following the day-to-day works is *Dinacharya* or get up from the bed till go for bed that routine is called *Dinacharya*.

Detail description of *Dinacharya* starts from

### Prathakalottana

The first *Dinacharya* start from the getting from the bed one should get up from the bed at *Bramhi Muhurta*.<sup>[6]</sup> That is best time for study, which help to person and keep mind calm and heathy, after getting up from the bed one should recite the name of Lord Vishnu to avoid any grief, after should have glimpse to touch of *Dadhi*, *Ajya* (ghee), *Adasa* (mirror), *Sidhartha* (white mustard), *Bilva* because they are *Mangalakara*.

Importance of *Prattkalottana* people who get up early or in *Bramhi Muhurta* typically have a higher concentration and are more alert and enthusiastic throughout life.

### Soucha Vidhi

After getting up from the bed one should clean the excretory orifice to maintain good health. Reliving self from the natural urges or performing excretory function early in the morning for prolonged life. After should clean the external orifices, which increases brightness and strength. By the *Souch Vidhi* body becomes light, Body will be cleaned and becomes strong.

### Danta Dhawana

After getting up from bed one should do the *Danta Dhavana* to clean the mouth or oral cavity with plant like *Nimba* etc. The stick should be straight, not having

nodes, not wounded, not having many knots, which is freshly obtained from a tree grown in suspicious place. The length of sticks is 12 *Angula* and size of little finger. The *Rasa* should be *Katu, Tikta, Kashaya*. After chewing it to soft, brush teeth. Should be cleaned without any harm to gums. One after other along with *Danta Shodana Churna*. The teeth should be cleaned with a mixture of *Madhu + Trikatu* or *Taila + Lavana* or Powder of *Tejovati* bark.

Plants used for *Danta Dhavana Maduka* (pungent), *Karanja* (pungent), *Nimba* (bitter), *Khadira* (astringent) are better for teeth cleaning.

If person brushes teeth with these below mentioned plants get some benefits<sup>[7]</sup>

Plants	Benefit	Plants	Benefit
<i>Arka</i>	Increase valour	<i>Kadamba</i>	Intelligence
<i>Vata</i>	Brightness	<i>Campaka</i>	Strong voice
<i>Karanja</i>	Success	<i>Sirisa</i>	Fame & span of life
<i>Plaksha</i>	Wealth	<i>Apamarga</i>	Intelligence
<i>Badara</i>	Good food	<i>Asana</i>	Working capability
<i>Khadira</i>	Good odour	<i>Dadima</i>	Handsome look
<i>Bilva</i>	Good wealth	<i>Kakuba</i>	Handsome look
<i>Udumbara</i>	Correct talk	<i>Kutaja</i>	Handsome look
<i>Amra</i>	Health		

### **Jivha Nirlekhana**

The tongue should be cleaned with tongue cleaner made up of gold, silver, copper or wood or a Soft leaf. It should be able to remove dirt. It should be having length of 10 *Angula*. The *Jivha Nirlekhana* clears the coats on tongue removes dirt, bad smell and increase taste by stimulating taste buds (*Ruchiprada*).

### **Kavala**

One should gargle frequently with cold water. This acts on phlegm, relives thirst, removes dirt and cleans inner part of the oral cavity. Gargle with warm water removes phlegm bad taste from oral coating It also relives from disease of teeth and brings lightness.

### **Gandusha**

Holding liquid in the mouth without moving it inside dispels bad taste, Bad smell, Swelling and inactivity. Happiness and firmness of the teeth occurs from holding oils in mouth.<sup>[8]</sup>

### **Mukha Praskhalana**

Washing face with cold water prevents haemorrhagic disease, Pimples, dryness and other hyper pigmentations; warm water relives *Kapha* and *Vata* keeps it soft by removing the dryness. Washing mouth and eye either decoction of barks of *Kshiri Vrukshas* (*Panchavalkala* added with milk or decoction of *Bhallataka* or with decoction of *Amalaka* or with cold water should be done). This Practice quickly cures *Nilika* (black patch), dryness of mouth, eruption and discoloured patches on the face and diseased produced by *Rakta Pitta*.

**Anjana & Aschyotana<sup>[9]</sup>**: Means dropping liquid drug in eye in order to stimulate secretion, the term generally for eye drops and need not be restricted in evocative drugs.

After *Danta Dhavana* one should go for *Anjana Vidhi*. It is mentioned that applying *Anjana* (*Saviranjana* or *Rasanjana*) or collyrium will improve vision, protects eyes and give brightness to eyes like a moon in a clear sky.

By the *Aschyotana* procedure eyes become able to see even minute objects and eyelashes become smooth and firm. The eyes are predominant of *Teja Mahabhoota* continuous use of *Saviranjana* provokes *Kapha Dosha*. It improves the eye sight like *Garuda Drusti* (like eagle eye sight) which is a sharp and able to see minute things.

The *Rasanjana* is to be applied once in a week to alleviate the vitiated *Kapha Dosha* for keeping the vision clear.

**Nasya**

The *Nasya* means nasal administration of the medicated drugs. The *Nasya* can be done regularly with mustard oil. In case of vitiation of *Kapha Dosha* the *Nasya* is to be done in morning in case of *Pitta* afternoon in case of *Vata* evening is time for administration of *Nasya Karma*, by following above guidelines for procedure can get following benefits it improves breathing pattern, voice and clear senses.

By using *Anutaila*<sup>[10]</sup> as *Pratimarsa Nasya* (2 drops in each nostril) It keeps shoulders, neck, chest strong, voice becomes sweet, mouth becomes fresh and free from foul smell. All the sense organs become clear and strengthen.

**Abhyanga**

*Abhyanga* means the oil massage to body. Should be taken daily which provides strength to all parts of the body. Application is preferred on ear, head and on feet. Mustard oil, aromatic oil & any oil extracted from flowers or any *Vatahara* drugs is used.

Oil massage relives *Vata* & *Kapha* and provides strength, happiness, sleep, complexion, softness, longevity of life, give strength to all sensory organs, enhance better vision, relives scalp disease, enhances growth of hair and provides strengthening to the hair roots.

**Padabhyanga**

Application of oil to feet promotes sleep, enhance vision, removes numbness of feet, tiredness, rigidity, contraction and cracks.

**Udvardana**

*Udvardana* means Massage with fine Powder in the opposite direction of hair follicles with required or prescribed pressure. Regular conduct of *Udvardana* reduces *Kapha* & *Medas* and increases *Sukra*, *Rakta* and *Bala* and improves skin health. If *Udvardana* is done on the face, eyes become strong, Muscle and face becomes brighter with no pigmentation resembling like a lotus and it provides strength to the muscles and nerves of face region.

**Snana**

Taking bath Increases appetite; increase life span, improves immune system and strength, enhance power of digestion, improves sexual vigour, removes itching, tiredness, dirt, sweat, drowsiness, thirst, burning sensation.

By the cold external sprinkling reduces burning sensation and increase appetite. The hot water bath gives strengths and reducer *Vata* and *Kapha* and cold water pacifies blood & haemorrhagic disease.

**Vyayama**

Activities, which produces tiredness to the body is known of *Vyayama*. In other way the *Sharira Chesta* which is *Ista* and which brings stability to the body and gives *Bala* is known of *Vyayama*.

Regular exercising provides the body with lightness work efficiency will built body. Lessened *Dosha* and increases digestive fire that is appetite and digestive capacity.

*Vyayama Karma* is more effective during *Vasanta* and *Sita Ritu*. It reduces fat and body parts becomes distinct and firm, it prevents early degenerative changes and encroaches age line very slowly.

**Ratricharya**

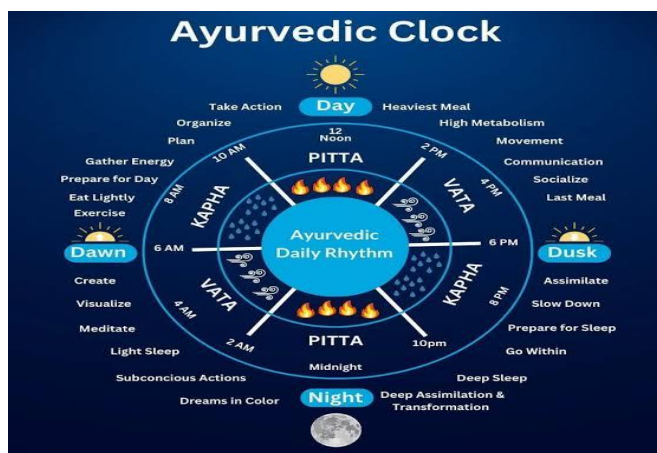
*Ahara*, *Maituna*, *Nidra*, *Sampatha* and *Gati Adhava* these 5 activities should be avoided in evening. The *Ratri* is having the cold in effects. Mitigates thirst, *Pitta* and burning sensation. Meals should be taken with in first *Prahara* (3hr) of night. Food should be slightly less in quantity than forenoon and devoid of things difficult for digestion. After taking light and conductive food in evening person should go to sleep with pleasant mind. After offering prayers to God in his own bed.

The regulation of sleep is processed by the homeostatic physiology of the circadian rhythm or The Sleep/wake cycle. Circadian rhythm is the 24hr internal clocks in our brain that regulates cycles of alertness and sleepiness by responding to light changes in environment. Our physiology and behaviour are shaped by the Earth's rotation around its axis. The sleep/ wake cycle can influence eating, digestion, body

temperature, hormonal release and other body functions like neurotransmitters Secretion, regulatory functions.

**ZEITGEBER:** A rhythmically occurring natural phenomenon which acts as a cue in regulation of body's circadian rhythms.

External factors regulate **ZEITGEBER:** Light, temperature, social interaction. pharmacological manipulation, exercise, eating.



### Effects of age on rhythm

- New born -16 to 20hr
- Child -10 to 12 hr
- Age 10 -9 to 10 hr
- Adults -7 to 7.5 hr
- 35 on wards women's sleep more than men

### Cell Rejuvenation<sup>[11]</sup>

Life expectancy of an individual depends upon certain-factors genetic environmental, Life style and Some age-related diseases. Individuals age because their cellular function slowly explained on the basis of several theories: shortening of telomere without replacement of damaged ends Persistent oxidative stress, mitochondrial dysfunction, DNA Damage, altered gene expression, reduced autophagy, activation of tumour suppressor genes and extreme obesity. Ageing can be counteracted by antioxidants and caloric restriction.

Ageing cause decline in morphology and function of multiple organs: cardiovascular System, Nervous System. Muscles, bones, eyes, ears, immune system

and skin about 80% of cancers are seen in age range of 50-80 years.

The Therapeutic massage can be correlated with Ayurvedic concepts of *Abhyanga* and *Udvartana*. The massage the body with oils is *Abhyanga*. It should be taken daily due to *Abhyanga* body becomes strong and firm, enhances sleep, lengthy life span. It does delay in ageing process.

*Bhavaprakasha Acharya* in *Bhavamishra* explained that a man who takes bath by applying *Amalaka* to head will be live for hundred years without folds or greying of hair and by doing *Vyayama* body under goes degeneration very laterally and old age encroaches very slowly.

The other type of massage is *Udvartana*. It reducing *Kapha* and *Meda* and increases *Sukra*, *Rakta*, *Bala* and cleans dirt of skin & brings softness.

### DISCUSSION

In Ayurveda we give importance to the both prevention of disease and the treating the disease for that our *Acharyas* explained some of the important concepts like *Dinacharya*, *Rutucharya*, *Aharavidhi* etc. *Dinacharya* is relevant to present era. Fast moving life many drastic changes have taken place in dietary habit and life style. Which pays way for many metabolic disorders. This routine can be changed by adopting *Dinacharya*. In Ayurveda it describes "*Rogastu Dosh Vaishamyam Doshasamyam Arogyam*" which means the vitiation or imbalance in *Doshas* leads to disease and *Samana Doshas* leads to *Arogya*, By the *Samanatha* of *Dosha* our body will be healthy. To maintain healthy life, one should follow the *Dinacharya*. *Acharya Bhavamishra* explained that an individual become healthy only when he properly follows *Dinacharya*, *Nishicharya* and *Rutucharya*. By this circadian rhythm will be maintained because of the wake up daily in *Bramhi Muhurta* and sleeping at night time.

In this era everyone has stress because of busy life style. In this present time everyone wants long life and healthy life, to achieve this therapeutic massage is one of the ways. On the earth everyone will become aged due to time. Ageing cannot be stopped but it can be

slowdown for this massage is one of the best ways. Massage will give skin complexion, enhance the skin strength and enhance the sense organ power and many more. In the people majorly due to stress, pollution, diet everyone has the age related problems like dryness of skin, Falling of hair, weakness, greying of hair to overcome this therapeutic massage is one of the best way. The main aim of the *Dinacharya* and therapeutic massage is to build the healthy society and healthy individuals and maintain good health.



## CONCLUSION

This article aim is to explain the importance of *Dinacharya* in Ayurveda, *Dinacharya* plays important role. *Dinacharya* means practice of daily routine. One should follow *Dinacharya* to get a healthy and good life. The following of *Dinacharya* leads to balanced state of *Tridosha* and in this way directly affected the biological clocks and circadian rhythm of the body. The good practiced *Dinacharya* results into balance between *Dosha*, *Dhatu*, *Mala* and It helps the formation of the *Ojas*. *Ojas* is main component behind the *Vyadikshmatva* in Ayurveda. The proper following of *Dinacharya* leads to cure the disease and prevent from disease. The proper maintenance of the body by the mode of *Dinacharya* leads to balance state of mental health and biological clock. The ageing is one of the physiological process and time based process. Ageing cannot be stopped but it can be slowdown by following a proper *Dinacharya* procedure like *Kavala*, *Gandusha*, *Abhyanga* and *Nasya* etc. So, in this era

following of proper *Dinacharya* procedure is much needed to maintain healthy life style and to regulate the equilibrium state of circadian rhythm.

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