

## A STUDY ON THE EFFECT OF DINCHARYA REGIMEN IN MODERN ERA

Dr. Rashmi Tiwari\*<sup>1</sup> and Sunita Temhuna<sup>2</sup><sup>1</sup>Assistant Professor, Department of Rachna Sharir, Rajiv Lochan Ayurved Medical College, Durg (C.G.).<sup>2</sup>Assistant Professor, Department of Samhita Siddhanta & Sanskrit, Rajiv Lochan Ayurved Medical College, Durg (C.G.).**\*Corresponding Author: Dr. Rashmi Tiwari**

Assistant Professor, Department of Rachna Sharir, Rajiv Lochan Ayurved Medical College, Durg (C.G.).

Article Received on 05/06/2019

Article Revised on 26/06/2019

Article Accepted on 16/07/2019

**ABSTRACT**

*Ayurveda* is the science which mentioned various principles for prevention and treatment of diseases. It is the science which laid emphasis on the preventive aspect. *Dincharya* (daily regimen) is one of the principles mentioned in *Ayurveda* in context to prevention. In today's scenario, the daily routine of each individual has become so busy and hectic, that many of the non-communicable diseases (lifestyle disorders) have taken the form of epidemic in current era. Ideal health means positive and perfect health and not merely an absence of disease. The criteria of ideal health are sound physical health and the best mood of sense, mind and soul. Health is a dynamic and constantly changing state. Health is the best root factor in achieving. *Dharma* (attain pious acts), *Artha* (wealth), *Kama* (desire) and *Moksha* (salvation). *Ayurveda* offers several measures related to restoration of health which includes *Dincharya*, *Ritucharya*, *Achara Rasayana* and *Sadvrata*. The *Dincharya*, which literary means daily routine is considered as best preventive measure in *Ayurveda*. The *Dincharya* includes all aspects of regimen and diet, to stay healthy and happy. A particular lifestyle of person is a collective product of his/her physical capacity coordinated with psychological functioning displayed in the form of habits, behaviours, dietary and living pattern based on his own training sought from childhood and also gained from his immediate companions including parents, siblings etc. Now a day, a sedentary life style, faulty dietary habits, lack of exercise are the main cause for metabolic imbalances which leads group of diseases like Hypertension, Diabetes mellitus, obesity etc. and making them one of the leading causes of death. *Ayurvedic* texts explains various fundamental principles aimed at preventing occurrences of diseases and to promote a healthy life, for these prevention aspects *Dincharya* is used to adopt in daily routine by people which can improve the quality of life and maintenance of good health. *Dincharya*; *Din* means daily and *charya* mean activity or regimen is necessary for maintaining a healthy body, mind, spirit which is useful to establish balanced constitution, aid in digestion and absorption, leads to peace, happiness. *Ayurveda* described a wholesome daily routine or day to day conduct (*Din-charya*) as not only prophylactic, but conducive to four *Purusharthas*.

**KEYWORDS:** *Dincharya*, *Ritucharya*, *Swastha*.**INTRODUCTION**

*Ayurveda* is the ancient science of life. It is the science which not only deals with the curative aspect of diseases but gives more importance to preventive aspect "Prevention is better than cure". There is a close relationship between lifestyle of an individual and the state of health and disease. Lifestyle refers to someone's way of living or we can say the dietary (*Ahara*) and behavioural (*Vihara*) choices of an individual. That he/she usually practices in daily routine of life. Since the time immemorial healthy and happy life of hundred years is a cherished wish of human beings. In the world of ever changing and modern civilization, this wish has been a nightmare and this is mainly because of us human beings living in a stressful and polluted environmental and changing our life style, behaviours and mechanical

life pattern every now and then. The health of an individual is dependent on both hereditary and environmental factors. Health is a condition in which all the physical and mental mechanism of an individual functions normally. It is not merely an absence of disease.<sup>[1]</sup> *Ayurveda* recognized this condition as the state of equilibrium of three *doshas* and *sapta dhatu* function "*(dosha samya rogta)*" feeling of ease "*(such sanghayam arogyam)*". Further it has been said that, the individual who has the normal function of *Dosha*, *Dhatu*, *Mala* and *Agni*, along with pleased senses, mind and soul is called as *swastha* (healthy individual).<sup>[2]</sup> Health includes one's reserve of physical strength and stamina as well as mental steadiness to meet the requirements of daily life. Only healthy individual of sound body and mind can endure social and cultural pressures. Health not

only means freedom from disease but the ability to work with satisfaction and self control. In a broad sense, the state of positive health implies the notion of “perfect functioning” of the body and mind. *Acharya Sushruta* defined healthy person as – He in whom the three *doshas* (*vata, pitta, kapha*), *Agni* (digestive power), the seven *dhatu*s (tissues), *malas* (waste products) and their activities are normal, his soul, sense organs and mind are calm/ clear, is called *Svastha* (healthy person).<sup>[3]</sup> This equilibrium of *Dosha, Dhātu, Mala* and *Agni* is dependent on various factors like diet, daily activities from morning to night, sleep pattern and many such factors directly or indirectly. science of *ayurveda* has 2 objectives – “*swasthasya swasthyarakshnam aaturasya vikaara prashamnam*.”

*ch*”-i.e. to maintain the positive health in the individuals who are healthy and to treat the persons who are suffering from disease. For fulfillment of the first objective (to maintain positive health in healthy individuals), *Ayurveda* has mentioned some lifestyle strategies.<sup>[4]</sup>

1. *Dinacharya* (daily regimen)
2. *Ritucharya* (seasonal regimen)
3. *Sadvritta* (Good moral conducts)
4. *Ashtang Yoga* (Eightfold yoga path first described in *Patanjali's Yoga Sutras*)

All these strategies are preventive rather than curative and *dinacharya* (daily regimen) is one of these preventive principles of *ayurveda*. These daily regimens if followed regularly have beneficial physiological effects on our body and our mind.<sup>[5]</sup>

In Sanskrit, the daily routine is called as *Dinacharya*. ‘*Din*’ means ‘day’ or ‘*acharya*’ means ‘to follow’ or ‘close to’. So *Dinacharya* is an ideal daily schedule taking into account the nature’s cycle.<sup>[6]</sup> In *Ayurveda*, the focus is levied on the early hours of the day as it is instrumental in setting the tone of your day. *Ayurveda* believes that routine is a discipline for the body and mind which strengthens immunity and purifies the body of its wastes. With the help of simple healthy routine, one can clean the body and mind, balance ‘*doshas*’, strengthen immunity and start the day on a refreshing and rejuvenating note. Follow the simple routine in the morning will help you start the day on a blissful note.

## MATERIALS AND METHODS

Various *ayurvedic* classic texts – *charaka samhita*, *Sushruta samhita*, *Ashtang Samgraha*, *Ashtang hridaya*, *Bhava prakasha* were used as source materials. Apart from this, websites and modern books on preventive and social medicine were also searched for this study.

### *Various Dinacharya Modalities and their beneficial effect on body and mind*

*Ayurveda* describes some daily regimen modalities for maintenance of positive health required for achievement

of a long, healthy active life, achieving satisfactory enjoyment of life and attainment of self realization.

1.) ***Brahmamuhurta jagrana***: It is advisable to wake up during *Brahma muhurta* (early in the morning i.e. 90 minutes before sunrise.)<sup>[7]</sup> One should wake up about one and a half hour before the sun rise so that you can synchronised with the rhythm of sun. *Ayurveda* recommends an auspicious time “*Brahma Muhurata*” which means “the time of *Brahma*”<sup>[8]</sup> the pure consciousness – for rising up in the morning. About an hour and a half before the sunrise, a great shift in energy fills space. Then, about half an hour before sunrise, a second boom of energy dawn in the atmosphere. Hope, inspiration and peace manifest at this time. This time is considered for attaining *brahm gyan* (meditation and self analysis), supreme knowledge and eternal happiness. At this time environmental is pure and calm and soothing and the mind is fresh after sleep. Meditation at this time improves mental performance thus helps in increasing *satva guna* therefore subduing mental irritation or hyperactivity and lethargy which is contributed by *rajas* and *tamas guna*.

- Nascent oxygen in the atmosphere in the early morning easily and readily mixes up with haemoglobin to form oxy-haemoglobin which nourishes the remote tissues rapidly.
- Exposure to bright light in early morning causes the release of serotonin (neurotransmitter biochemically derived from tryptophan) which contributes to feelings of well being and happiness and keeps the person active and alert.<sup>[9]</sup>
- In the early morning, there is minimal pollution (noise, water, air) which enhances the concentration. Today’s modern lifestyle results into development of many faulty habits like late night sleeping and waking up late in the morning.<sup>[10]</sup>
- Stimulates to production of melatonin (Mood elevator), which gives prime health throughout the day.
- Late night sleeping or chronic sleep loss causes the elevation of cortisol which in turn is responsible for rise in B.P (secondary hypertension) and is likely to promote the development of insulin resistance, a risk factor for obesity and diabetes.

***Grita Evam Darpana Darshanam***,<sup>[11]</sup> – (looking own face into ghee or mirror) *Ayushyam* (increase prolongs longevity), Avoids mental confliction.

***Ushna jalpana***: 1-2 glasses of water kept for whole night should be taken before sunrise.

Not drinking enough water in a day is also a triggering factor for renal stones, haemorrhoids and constipation. *Ushna jalapana* also prevent old age disease (*jaraparimukthi*).<sup>[12]</sup>

**Procedure of defecation**: Every person should eliminate the natural urges (faeces and urine) daily. □ Defecation at proper time clears the rectum, increases digestive power,

and prevents various manifestations like constipation, foul smelling flatus.

**Achamana/ Mukha –netra prakshalana**(Washing of face and eyes):- to wash, which will be done after cleaning the excreta, tears, sneezing, and after travelling, to prevent eye diseases.

**Dantadhawan (Tooth brushing):-** Removes the impurities of tongue, tooth and mouth. It is directed to clean the teeth in the morning and after taking meals.<sup>13</sup>

- It stimulates taste perception and increases the salivation. Saliva contains salivary amylase (ptyalin) which plays a role in breaking down food particles entrapped within dental crevices, thus protecting teeth from bacterial decay. Saliva contains lysozyme and secretory IgA which act as antimicrobial agents.<sup>14</sup>
- In *ayurvedic* texts, it is mentioned to clean the teeth by chewing twigs of certain medicinal plants which makes the gums stronger and is also a good exercise of facial muscles. It alleviates *Kapha and pitta*.

**Jihva –nirlekhana (tongue cleaning):-** Tongue should be cleaned by a long flexible strip of metal or plant material. Removes the impurities of tongue. It will benefit in bad odour of mouth, cure oedema, and gives taste.<sup>15</sup> Now a day those metals are very costly so at least we can use at least steel items. According to acupressure theory, tongue has many more acupressure points which initiate the proper functioning of vital organs like liver, kidney, and bladder, and stomach, intestine.

**Mukha Netra Prakshalana with Bhilloodaka Kashaya or Lodra Kashaya or Amalaki Kashaya –**

- Neelika, Mukha Shosha pitika, vyanga mukha roghara, Rakta pitta hara.
- Ksheeraprakshalan Snigdhatata in mukha and mukha dosha hara.
- Netra prakshalan (eye wash with sheetalodaka) purifies the eyes and prevents Akshi roga.<sup>16]</sup>

**Anjana - (application of collyrium in eyes):-** In today's time, excessive work on computer results in dry eye or computer vision syndrome.

1. When *Anjana* dravyas are applied; it causes irritation to eyelids and conjunctiva and enhances the circulation.
2. Makes eye beautiful, resistance against wind and sunlight.

**Nasya (oily nasal drops)**

- Sticky nature of the nasya dravyas (anu taila, katu taila) avoids the entry of dust particles into the nasal tract.
- The olfactory nerve endings are seen on cribriform plate of ethmoid bone, Nasya dravyas triggers the nerve endings and sends the message to the CNS and initiates the normal physiological functions of the body.<sup>17]</sup>

- The beard and hair will never neither turn gray nor fall off but will grow in abundance.

**Sneha gandusha dharana (Retaining oil in mouth)**

Prevents Asya, kanta Shosha (dryness of mouth and throat), prevents Cracking of lips (Osta sputana), makes the teeth healthy and strong, and enables them even to chew the hardest eatables.

1. The *sukhoshna* (lukewarm) *gandusha and kavala* dravyas are used which improves the circulation of oral cavity.
2. Gargling procedure of *kavala* poses the massaging effect over the oral mucosa and even strengthens the muscles of cheek, face and jaw bones.

**Dhumpana (medicated fume inhalation)**

Prevents jatrudhwagata roga which are caused by vata and kapha, it strengthen the voice, It also prevents premature graying of hair.

1. When the *dhumpana* dravyas are lightened with fire, it releases the smoke, soot and even CO<sub>2</sub>. Carbon atom in CO<sub>2</sub> has the tendency to stimulate the respiratory centre present in brain stem which may triggers the normal physiological function of respiratory system.<sup>18]</sup>
2. Disinfective action of the *dhumpana* dravyas like *haridra, guggulu and vacha* cleanses the Respiratory tract, oral cavity and pharynx.

**Abhyanga (oil massage):-** A person should do oil massage daily.

Body becomes firm, skin becomes beautiful it alleviates vata disorder, diminishes fatigue, promotes strength comfort vision and sleep, prevents scalp diseases, ear diseases and prevents crackling of feet.

Massage of the body subsides, *Kapha*, dissolves the fat produces firmness to the limbs and gives good appearance to the skin.

1. Massage enhances the overall blood circulation and transport the potency of drugs to desired part.<sup>19]</sup>
2. Massage triggers the acupressure point which induces the release of endorphins which shows analgesic effect.
3. And by doing *padaabhyanga*, it provides strength and stability to feet, improves the vision and pacifies the *vata*. By doing *Shiroabhyanga* it prevents the balding, graying, hair fall, strengthens the hair root, and makes the hair long and black. And it also nourishes the sense organs, softens the skin.

**Vyayama (Physical Exercise):-** Makes the body stout and strong, helps the symmetrical growth of the limbs and muscles. Improves the complexion and digestive fire. Prevents laziness and makes the body light and glossy, firm and compact.

- Physical Exercise increases the carbohydrate metabolism (Glycolysis) and causes lipolysis of

accumulated adipose tissue (Gluconeogenesis) thereby causing abolishment of extra fat.

- It increases O<sub>2</sub> supply to remote tissues.
- The perspiration takes out the accumulated toxins from the body.

By doing regularly exercise nourishes the body, gives good complexion, proportionate the body parts, enhances *agni*, avoids laziness and obesity, provides lightness of the body parts, and also avoids early aging. It lowers the body fats, reduces the risk of heart disease. And lowers LDL and raises HDL. It helps for the controlling the blood sugar, reduces the risk of osteoporosis and cancer, helps for giving energy, reducing the stress, improves the sleep, to enhance mode of work and the self- esteem. In modern days about exercise they are having knowledge so that will improve individual life span.

**Chankramana:-** It is a variety of exercise which does not cause any kind of trouble to the body

It clears the channels (srotas) of the body and increases the perceptive power of organs.

**Snana (Bath):-** Daily bath improves enthusiasm, strength, appetite and removes sweat and other impurities from the body. Promotes virility and longevity, eliminates fatigue, sweat and dirt. Increase body strength. Cleanses the sense organ. Bath stimulates digestive fire, increases span of life *Ojus* and strength. It also removes itching, dirtiness, fatigue, sweat, Lassitude, thirst etc.

**Udvartana:** By doing this blood vessels become dilated and complexion in the skin is enhanced. Cures rashes, *vata* diseases, enhances the strength of thighs, and provides the lightness.

**Samavahana;** Gentle massage enhances the affection, sleep, virility, avoids the *Kapha* and also improves the circulation.

**Aahara:** One should start *Ahara* with *Madhura rasa* then *amla*, *lavana*, *tikta*, *katu*, *Kashayaa*. Like this one should take *Ahara* in a chronological order. And one should take *anupana* as *jala*. Because this *Ahara rasa* gives strength, *bala*, *varna*, *pushti*, *dhatu poshana*, *indriya prasadata* etc.

Food is the life, it improves complexion, good voice. Prolongs life, gives happiness and satisfaction. Promotes growth, strength and intelligence. Improves memory, appetising power, energy, natural strength of mind and increases the *ojas*.

**Tambula:** After taking the food one should take *Tambula* (betel leaves and nut) because it will gives oral hygiene, digestion of food. (it is recommended after night's sleep, after bath, after the meal and after vomiting.)

It pacifies all the three doshas, causes cheerfulness, cleanses the mouth, removes all foetid odour it causes extra salivation which will aid the digestive process

**Vritti Dharma** (*Attending prescribed profession like krishi (agriculture), pashupalan, Rajopaseva* – profession should be according to one's Dharma. It will give happiness and satisfaction to the life.

**Achamana (pada, Mukha prakshalana)** washing of feet and face – removes fatigue, prevents infection.

**Sandhyopasana / Mangalakritya (Worship of Divine):-** One should remember God and do *Bhagwadsamarana* daily. One should do self –analysis of daily activities.

**Ratri Bhojana (nights mood)** it should be light and less in quantity – gets easily digestion, provides nourishment. **Nidra (Sleep)** seven types of *nidra* have been mentioned. Out of that *ratri Swabhawaja* (*bhoota Dhatri*) it considered to be conductive to health.

Night sleep causes happiness, nourishment, strength, Virility and Vitality and also brings *dhatu samyata*. Balance body constitute. Promote good vision, complexion and improves digestive power. Healthy sleep can help your body better regulate blood sugar levels, keep your immune system functioning properly and even improve your heart health by decreasing stress. Sleep also helps you function effectively throughout the day.

## DISCUSSION

Ayurveda, as the science and art of integrated and meaningful life, is as much concerned with the maintenance and promotion of health as with curing the illness that have arisen. Health in this context is an independent and positive idea. Acharya Charak lays down; "One must always manage to maintain health (*swasthya*), so that the disturbance (*vikara*) that have not arisen may not arise. According to Acharya Sushruta, man is said to be "*swastha*" whose "*Dosas, Agnis, Dhatus and malas* are in the state of equilibrium along with mental, sensory and spiritual pleasantness and happiness.

Daily habits of the people makes their lifestyle .The rapid modernization has changed the lifestyle and behavioural patterns of people which is responsible for occurrence of lifestyle disorders like cervical and lumbar problems, cancer, and appendicitis on a large scale in population. The incidence of these lifestyle diseases in the past decades, has reached alarming proportions with increasing westernization of lifestyle. The management of these lifestyle disorders demands modification in faulty dietary and behavioural habits of person. According to the science of *ayurveda*, stress should be laid upon health promotion rather than management of disease. Ayurveda provides better solution in the form of following proper *Dincharya* regimen described in *Ayurvedic* texts which promotes positive health of the

individuals by maintaining normal physiological functions of the body and keeps the person healthy forever by slowing down the irreversible changes occurring in the body with the advancement of time (age). *Dincharya* word is composed of two words “*Din*” denotes a day and “*Charya*” means duties, action to be carried. In context of medical science *Dincharya* can be expressed as the health generated by daily activities. It means “*Dincharya*” or “*Daily Rituals*” or “*regimens*” are all those activities we should do (or we do) from the time of awakening in the morning till we go to the bed at night. In a modern busy life, incorporation of “*Dincharya*” in day to day activities can help you to be more active and focused in work and life and prevent diseases. But it is important to incorporate it in a way it makes sense in our corporate lifestyle. Keeping a routine or fixed time to do everything is the first step towards “*dincharya*”

**Benefits of Dincharya** – *dincharya* aims at providing comprehensive body mind health through a well maintained daily regimen. *Dincharya* aims at preventing the diseases in long run. Thus it becomes an important preventive healthcare strategy. *Dincharya* or daily regimens are indicated for following reasons –

- **Maintenance of hygiene** – like bathing, tooth brushing, tongue scraping, Gandhusa (oil pulling) gargling, feet washing etc.
- **Suprasanna indriyatavam (promote the brightness and health of sense organs)** – like Anjana (application of collyrium in eyes), abhyanga (oil massage), udavartan (dry massage), siro-abhyang (oil massage on head), padaabhyanga (oil massage on feet).
- **Deha Balartha (to enhance and maintain physical strength)** – like vyayam (exercise), Chankramana (walking), massage, power massage etc.
- **Ayusho Labha (promotion of health and longevity)**- like awakening during Brahma Muhurta, vyayam (exercise), Chankramana (walking), abhayanga.
- **Soumanasyata (to keep the mind at peace and harmony)** – Getting up at Brahm Muhurta, snan (bathing), abhyanga (oil massage), siro-abhyang (oil massage on head), padaabhyanga (oil massage on feet), sex, nidra (sleep).
- **Rakshnartham (for self protection)** – like Rakshogna Vidhi, Vastra dharan (cloth wearing), Chhatra Dharan (keeping an umbrella), Paduka dharan, Danda Dharan., Kawacha Dharan.<sup>[21]</sup>

## CONCLUSION

The first and foremost aim of Ayurveda is the promotion of health of a healthy individual and the prevention of disease. Health includes one's reserve of physical strength and stamina as well as mental steadiness to meet the requirements of the daily life. Only healthy individual of sound body and mind can endure social and cultural pressures. Health not only means freedom from

the disease, but the ability to work with the satisfaction and self control. Ayurveda stated that, the healthy body is the mean to achieve *Dharma* (attain pious acts), *Artha* (wealth), *Kama* (desire) and *Moksha* (salvation). Lifestyle Change, more than any other factor, is considered to be the best way of preventing the disease and early death in our society. *Ayurveda* is the science which mentioned various principles for prevention and treatment of diseases. It is the science which laid emphasis on the preventive aspect. *Dincharya* (daily regimen) is one of the principles mentioned in *Ayurveda* in context to prevention. In today's scenario, the daily routine of each individual has become so busy and hectic, that many of the non-communicable diseases (lifestyle disorders) have taken the form of epidemic in current era. *Ayurveda* perceives that positive health depends on a healthy lifestyle of an individual. According to W.H.O.-sedentary lifestyle, unhealthy dietary habits and exposure to pollution are the triggering factors for most of the lifestyle disorders which will cause over three quarter of all deaths in 2030. Acc. to *Ayurveda* texts, *Kala* (time) is one of the causative factors (i.e. *trividha hetu*) in the initiation of diseases. The daily regimens if followed regularly terminates all the changes which can occur due to time at primary level as well as it slows down the irreversible changes occurring with the passage of time (age), thereby keeping the person healthy and disease free. These daily regimen procedures have beneficial physiological effects on proper functioning of the body thereby maintaining a state of equilibrium of three humours (*Vata*, *Pita*, and *Kapha*), seven tissues, three waste products and the power of digestion along with pleasant mind, soul and sense organs, which in turn helps to attain positive health. With the advancement of time, lot of changes has taken place inevitably in the social and religious customs and behaviour and also in the mode of lifestyle of people. The *dincharya* regimen if followed properly helps to attain physical, mental and spiritual well being of an individual.

## BIBLIOGRAPHY

1. Dr. P. Sudhakar Reddy, a Comprehensive Guide to Swasthavritta, Chaukhamba Sanskrit Pratisthan, Delhi, 2017.
2. Srikantha Murthy K.R., Sushruta Samhita with English translation, Third edition, Varanasi, Chaukhamba Orientalia Publishers, sutra sthan, 2007; 15/58.
3. Shastri Ambikadatt, Sushruta Samhita Hindi commentary, Chaukhamba Sanskrita, Varanasi, Edn, Sutra Sthan, 2012; 15/41.
4. Pt. Kashinath Sastri and Dr. Gorakhanath Chaturvedi, Agnivesha, Charak Samhita, Sutrasthan Chapter 5, Vidyotini Hindi Commentary by, Chaukhamba Bharti Academy, Varanasi, 1998; 113-133.
5. Bhavaprakasa of bhavamisra (original text along with commentary and translation) including nighantu portion, Vol 1, Commentary by Dr. Bulusu

- Sitaram, Foreword by Prof. K. C. Chunekar, Chapter 5, Shloka no.2, published by Chaukhamba Orientalia, Varanasi, Reprint edition, 2015; 67.
6. Shri Taranath Bhattacharya, Sabdastrotam Mahanidhi, Chaukhambha Sanskrit Series, Varanasi, 1-1967.
  7. Astangahrdayam by Vagbhata (Sutrasthana), English translation of Samvartika commentary as Jyotsna Commentary by Dr. Vishwvasu Gaur, Sutrasthana, Chapter 2, published by Chaukhamba Orientalia, Varanasi, First Edition, 2010; 21.
  8. Astangahrdayam by Vagbhata (Sutrasthana), English translation of Samvartika commentary as Jyotsna Commentary by Dr. Vishwvasu Gaur, Sutrasthana, Chapter 2, published by Chaukhamba Orientalia, Varanasi, First Edition, 2010; 22.
  9. Available from <https://en.m.wikipedia.org>>serotonin (Last accessed on 2017 Oct 10).
  10. Simon N. Young; Journal of Psychiatry and neuroscience, 2007 Nov; 32(6): 394-399. PMID: PMC2077351 (PUBMED).
  11. Dr. Mangalagowri V. Rao, a text book of Swasthavritta, Chaukhambha Orientalia Varanasi, 2007.
  12. Bhavaprakasa of bhavamisra (original text along with commentary and translation) including nighantu portion, Vol 1, Commentary by Dr. Bulusu Sitaram, Foreword by Prof. K. C. Chunekar, Chapter 5, Shloka no.303-304, published by Chaukhamba Orientalia, Varanasi, Reprint edition, 2015; 95.
  13. Astangahrdayam by Vagbhata (Sutrasthana), English translation of Samvartika commentary as Jyotsna Commentary by Dr. Vishwvasu Gaur, Sutrasthana, Chapter 2, Shloka no.2, published by Chaukhamba Orientalia, Varanasi, First Edition, 2010; 22.
  14. Available from <https://en.m.wikipedia.org>>wiki>saliva (Accessed on 2017 Oct 12).
  15. Dr. P. Sudhakar Reddy, a Comprehensive Guide to Swasthavritta, Chaukhambha Sanskrit Pratisthan, Delhi, 2017.
  16. Dr. Mangalagowri V. Rao, a text book of Swasthavritta, Chaukhambha Orientalia Varanasi, 2007.
  17. Available from <https://en.m.wikipedia.org> >wiki>olfactory nerve (Accessed on 2017 Oct 12).
  18. Available from <https://en.m.wikipedia.org>>wiki>respiratory centre (Accessed on 2017 Oct 13).
  19. Dr. P. Sudhakar Reddy, a Comprehensive Guide to Swasthavritta, Chaukhambha Sanskrit Pratisthan, Delhi, 2017.
  20. Trikamjin Yadavji, Charaka Samhita with Chakrapanidatta Ayurvedadipika commentary. Reprint ed. Varanasi (India) (Chaukhamba Surbharati Prakashana).
  21. B. Ramrao. Astanga sanraha of Vagbhata; 1st edition. Varanasi (India) (Chaukhamba vishnubharata), 2006.