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SUNSALTATION AND HEALTH

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ABSTRACT

Suryanamaskar (sun-salutation): Yoga is an ancient science useful for a healthy life. Sun-salutation is a procedure in yoga and element of *Hatha* Yoga, which involves energetic bodily movements synchronised with periodic breathing. Sun-salutation is beneficial to develop a healthy body and healthy mind even. Vital capacity of lungs is increased by sun-salutation. Now a day's obesity and heart diseases are a major issue which effects on health and rate of mortality. Sun-salutation is an easy way for cardiac fitness and to reduce the over-weight. Health of individuals is mostly affected by digestive system. Sun-salutation is useful to maintain health of digestive system by toning up the abdominal organs. As the oxygen consumption is increased during sun-salutation it detoxifies the blood from carbon dioxide like gases. It also affects on endocrine system and regulates their functions. Muscles of arm and chest are also build up its which gives a good shape to body. Menstrual problems in the females are also overcome by it. During Sun-salutation *mantras* are also used which is beneficial for mental health of practitioner.

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INTRODUCTION

Sun-salutation is the procedure in science of Yoga. By Yogic procedures fitness of external organs as well as internal organs is maintained. It is one kind of *vyaayma* (physical exercise) which is most effective for health. The individual who perform it daily will remain healthy forever. (Ghanekar and Vaidakiya Subhashit Sahityani, 1999) Healthy life is the one kind of important wealth for everyone. (Ghanekar and Vaidakiya Subhashit Sahityani, 1999) Even the big benefit in the life is also a healthy life. (Ghanekar and Vaidakiya Subhashit Sahityani, 1999) *Suryanamaskara* are performed by facing towards the East direction. (Vijay kumar Rai and Swasthavritta Vidyan, 2010) Now a day's the life style of individual is hectic schedule. Physical inactivity was estimated to cause 1.9 million deaths and 19 million DALYs globally. The possible effect of this physical inactivity may be, low back pain, Osteoporosis, Osteoarthritis, anxiety, depression, stress, and Obesity. (http://www.who.int/whr/2002/en/whr02_en.pdf)

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In Yoga science *Ashtang* yoga is described which consist of eight stages. These are as follows. (Vijay kumar Rai and Swasthavritta Vidyan, 2010)

1. *Yam*: (Ethical practices)
2. *Niyam*: (Ethical practices)
3. *Asana*: (Physical practices)
4. *pranayam*: (Physical practices)
5. *Pratyahar*: (Sensorial practices)
6. *Dhyan*: (Meditative practices)
7. *Dharna*: (Meditative practices)
8. *Samadhi*: (Meditative practices)

Sun-salutations involve the series of *Asana* in collaboration with *pranayama* and *Surya upasana*. It consist of following twelve steps

1. *Pranamasana* (Prayer position),
2. *Hastauttanāsana* (Raised arm position),
3. *Padahastāsana*, (Hand to foot position),
4. *Ashwa Sanchalanasana* (Hand to foot position),
5. *Parvatasana* (Stick position),
6. *Ashtanga Namaskara* (Salute with eight parts)
7. *Bhujangāsana*: (cobra position),

8. *Parvatasana*: (Mountain posture),
 9. *Ashwa Sanchalanasana*: (Equestrian posture),
 10. *Hasta Padasana*: (hand to foot position),
 11. *Hastauttanasana*: (Raised arm posture), and 12.
Pranamasana: (Salutation posture) (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3289222>)

During above each step mantra is chanted these are as follows:
 (Vijay kumar Rai, Swasthavritta Vidyan, 2010)

1. Om *Mitraaya Namaha*.
2. Om *Ravaye Namaha*
3. Om *Suryaya Namaha*.
4. Om *Bhaanave Namaha*.
5. Om *Khagaya Namaha*
6. Om *Pooshne Namaha*.
7. Om *Hiranyagarbhaaya Namaha*.
8. Om *Mareechaye Namaha*.
9. Om *Aadityaaya Namaha*.
10. Om *Savitre Namaha*.
11. Om *Aarkaaya Namaha*.
12. Om *Bhaaskaraya Namaha*.

Importance of *suryanamaskara* is, it beneficial physically as well as mentally. Due to *Asana* musculature of body develops, the muscles of thigh, arm, abdomen and chest are well developed. *Pranayama* helps to construct the healthy mind and also beneficial for the health of lungs. (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3289222>) Few weeks practice of *Suryanamaskara* (sun-salutation) is helpful in changing physiology and psychology which is beneficial to cardio-vascular and pulmonary functions. (<http://recent-science.com/index.php/rrst/article/viewFile/7397/3798>)

AIMS AND OBJECTIVES

- 1) To study Scientific method of *Suryanamaskara* (sun-salutation).
- 2) To study Benefits of sun-salutation.
- 3) To study role of sun-salutation in prevention of diseases.

MATERIAL AND METHODS

- 1) Classical texts of Ayurveda.
- 2) Various articles published in national and international journals.

History of Sun-salutation – Vedic history.

In Veda, some references found about praising the sun for healthy life. In the procedure of sun-salutation along with physical prostration *Surya Upasna* is also a major aspect. *Trucha Kalpa Suryanamaskara*- It is a one sort of procedure of sun-salutation described in Rig Veda, in which sun-salutation is performed by application of three *ruchas* in Rig Veda. *Aditya Prasna* –It is also another method of *suryanamaskara* (Sun-salutation) described in *Yajur Veda*, which is mostly popular in South India. (http://en.wikipedia.org/wiki/Surya_Namaskar_Origins)

History in Maharashtra (Satara district)

Pant Pratinidhi and Raja of Aundh (1868-1947) Shrimant BHAVANRAO SHRINIVAS 'BALA SAHIB' has a

importance in the origin of sun-salutation. He modifies the ancient method of sun-salutation and invents the modern method. (http://en.wikipedia.org/wiki/Surya_Namaskar_Origins) History in *purana- Aditya-hridayam* is also associated with procedure of sun-salutation and sun *upasana*. In Ramayana it is taught by Agastya to Rama to fight against Ravana (http://en.wikipedia.org/wiki/Aditya_Hridayam)

General instructions: (<http://rnarayanaswami.net/yoga/pdf/suryanamaskar.pdf>)

1. Practise the sun-salutation on empty stomach means at least two hours gap after meal.
2. After sun-salutation do not eat for 20 minutes.
3. In the morning perform the sun-salutation by facing towards the East direction.
4. In the evening perform the sun-salutation by facing towards the West direction.
5. Perform the sun-salutation steps slowly.



Twelve steps of sun-salutation (<http://lex123.hubpages.com/hub/Amazing-Benefits-of-Surya-Namaskara>)

Procedure of *Suryanamaskar* (Sun-salutation):

(<http://www.yogajournal.com/practice/2746>; Vijay kumar Rai, Swasthavritta Vidyan, 2010)

1. *Pranamasana*: (Prayer position)

Stand straight and erected, join the palms near the chest like we do in prayer. Use the *mantra* Om *Mitraaya Namaha*.



Pranamasana
(Salutation Position)

(<http://www.healthandyoga.com/html/news/surya.aspx>)

2. *Hastauttanasana*: (Raised arm position)

By inhaling and raise the folded hand's above the head. Form an arch like structure of back by bending backward. Chanting the *mantra Om Ravaye Namaha*.



Hastauttanasana
(Raised Arm Position)

(<http://www.healthandyoga.com/html/news/surya.aspx>)

3. *Padahastasana*: (Hand to foot position.)

After exhaling bends forward and downward so that the palms of both the hands touches the ground on either side of your feet. Take precaution that your knees are straight during this position. Use the *mantra Om Suryaya Namaha*.



Padahastasana
(Hand to Foot Position)

(<http://www.healthandyoga.com/html/news/surya.aspx>)

Padahastasna (<http://www.stylecraze.com/articles/yoga-asanas-to-reduce-belly-fat/>)

4. *AshwaSanchalanasana*: (Equestrian position)

While inhaling lower down hips and extend the left leg back and balance the leg on left toe. By bending the right knee the right foot is kept flat on ground. Fix the both hands on the ground on either side of right foot. Now raise the head in upward direction towards the sky .Use the *mantra Om Bhaanave Namaha*.



Ashwa Sanchalanasana
(Equestrian Position)

(<http://www.healthandyoga.com/html/news/surya.aspx>)

5. *Parvatasana*: (Stick position.) After exhalation take back right leg so that it join the left leg. Instantaneously raise the hips and bring down the head between the arms. Keep the arms and knees straight. Use the *mantra Om Khagaya Namaha*



Parvatasana
(Mountain Position)

(<http://www.healthandyoga.com/html/news/surya.aspx>)

6. *Ashtanga Namaskara*: (Salute with eight parts)

Keep hands and feet are in the same as above posture and bring your hips down while gently exhaling. By stretching body close to the floor direct the face downward and bring the chest and knees close to floor. Use the *mantra Om Pooshne Namaha*.



Ashtanga Namaskara
(Salutation With Eight Limbs)

(<http://www.healthandyoga.com/html/news/surya.aspx>)

7. *Bhujangasana*: (cobra position.)

Inhale first and pushes the chest forward and upward with the hands while lower down the waist. Push the chest in such a way that the spine will be arched and the head is facing up. Take care that knees and lower abdomen do not touch the ground during the posture. Use the *mantra Om Hiranyagarbhaaya Namaha*.



Bhujangasana
(Cobra Position)

(<http://www.healthandyoga.com/html/news/surya.aspx>)

8. *Parvatasana*: (Mountain posture)

By holding the breath as in previous position, place the right leg between the hand like as position 3 but instead of the left leg front take here right leg and place left leg back. Chant the *mantra Om Mareechaye Namaha*.



Parvatasana
(Mountain Position)

(<http://www.healthandyoga.com/html/news/surya.aspx>)

9. Ashwa Sanchalanasana: (Equestrian posture)

After exhaling, brings the left leg onward as in 2 position and room it among both arms. Later inhale and swing right leg forward between the hand and the left leg remain back resume posture. Use the mantra Om *Aadityaaya Namaha*



Ashwa Sanchalanasana
(Equestrian Position)

(<http://www.healthandyoga.com/html/news/surya.aspx>)

10. Hasta Padasana: (hand to foot position)

Inhale start and get up in position 1 then exhale bring the left foot forward and join both leg and resume posture. Use the mantra Om *Savitre Namaha*.



Padahasthasana
(Hand to Foot Position)

(<http://www.healthandyoga.com/html/news/surya.aspx>)

11. Hastauttanasana (Raised arm posture)

After Inhaling elevate the trunk up and bend backward then resume posture 2 and chat the mantra Om *Aarkaaya Namaha*.



Hastauttanasana
(Raised Arm Position)

(<http://www.healthandyoga.com/html/news/surya.aspx>)

12. Pranamasana (Salutation posture)

Straight the body and bring hand in front of the chest and resume posture 1. Use the mantra Om *Bhaaskaraya Namaha*.



Pranamasana
(Salutation Position)

(<http://www.healthandyoga.com/html/news/surya.aspx>)

Benefits of suryanamaskara

1. It is useful to lose weight without change in diet. (<http://yogahathayoga.com/surya-namaskar-to-lose-weight>)
2. *Suryanamaskar* is useful to increases heart rate adequate and to make major cardiovascular health benefits. (<http://yogahathayoga.com/cardiovascular-benefits-of-surya-namaskar-2>)
3. Provide strength to muscles and improves blood circulation.
4. It relieves stress factor and useful in sleep related disorders (http://health.sulekha.com/salute-the-sun-with-surya-namaskar-for-a-healthy-body-and-mind_599038_blog)
5. It lowers the blood pressure and pulse rate (<http://www.isrj.net/ArticleFullText.aspx?ArticleID=4656>)
6. It relieves chronic backache, neck pain.
7. It is Useful to lower down sugar in Diabetes mellitus.
8. It increases oxygenation and vital capacity of lungs (<https://vedicambassador.wordpress.com/tag/surya-namaskar>)
9. Prevents respiratory diseases like asthma and tuberculosis. (<http://pe.lsrj.in/UploadedArticles/159.pdf>)
10. If practised during pregnancy with modified steps, it reduces labour pain.
11. If practised after parturition it is helpful to regain pervious structure and strength of female reproductive organs (Vijay kumar Rai, Swasthavritta Vidyan 2010)
12. In new study it is noticed that practice of sun-salutation of 45 days has a positive effect on cardiac and respiratory system (<http://recent-science.com/index.php/rrst/article/viewFile/7397/3798>)
13. It is useful for detoxification and clear elimination channels. (<http://www.ssmrae.com/admin/images/3dd1ddcfa4d6081bdaf986b23f6c0694.pdf>)
14. Functions of Endocrine system improved especially thyroid gland. (<http://www.ssmrae.com/admin/images/3dd1ddcfa4d6081bdaf986b23f6c0694.pdf>)
15. It tone up muscles of Digestive system and prevents the diseases like gastric ulcers. (<http://pe.lsrj.in/UploadedArticles/159.pdf>)
16. It increases flexibility, strength and size of muscles. (<http://pe.lsrj.in/UploadedArticles/159.pdf>)

17. It is also helpful for mental health by reducing stress, depression and anxiety. (<http://www.ssmrae.com/admin/images/3dd1ddcfa4d6081bdaf986b23f6c0694.pdf>)
18. It increases neuro-muscular co-ordination.
19. Even 12 weeks practice of sun-salutation increases strength of skeleton muscle and grip of hand (http://statperson.com/journal/scienceandtechnology/Article/Volume12Issue2/12_2_5.pdf)

Who should abstain from Sun-salutation? (<http://www.ssmrae.com/admin/images/3dd1ddcfa4d6081bdaf986b23f6c0694.pdf>)

1. Females during menstrual period and during pregnancy.
2. Patients suffering from inguinal or umbilical hernia.
3. Patients suffering from high blood pressure are contra-indicated (<http://www.healthandyoga.com/html/news/surya.aspx>)

DISCUSSION

Physical activity is essential for a healthy and stressless life. *Suryanamaskara* (sun-salutation) is an ancient method of physical exercise which is beneficial by many ways for health of individual. It consists of series of *asanas* which built the musculature of body, mainly of arms, thigh and chest. Due to alternative contraction and relaxation of musculature of body the muscles are increase in size, shape and flexibility and nuero-muscular transmission even. *Pranayama* performed during sun-salutation ventilate the lungs properly, which is beneficial for oxygenation. Also the contraction and relaxation of lungs during breathing exercise in sun-salutation tone up them and keep them healthy, Which is helpful to reduce chances of pulmonary diseases like asthma and tuberculosis. The *mantas* chatted during sun-salutation are effect mentally and relieves the stress, depression and anxiety. Alternative contraction and relaxation of the abdominal muscles are tone up the abdominal organs and improves their functions. Especially organs of digestive system are benefited. As it relieves the stress and elevates the mood, it has a positive effect on the endocrine system. Patient suffering from hernia are contra-indicated as the abdominal pressure is increased during sun-salutation. If the females perform it during menstrual period chances of heavy bleeding are more. It is also contra-indicated in pregnancy to prevent foetal distress; sun-salutations with modified procedure are used during pregnancy for easy parturition.

Conclusion

By above review, it is to be concluded that sun-salutation produces many physiological changes in the body which is helpful for healthy life. Aerobic exercise during sun-salutation is beneficial for healthy pulmonary functions and oxygenation. Cardio-vascular functions are also improved along with positive effect on blood pressure. It helps to lower blood pressure. Psychological effect of which relieves the stress, anxiety and depression, hence it is needful for mood elevation. Musculo-skeleton effect increases the size and shape of body, which is important for fitness and also build a confidence. It is helpful in patients suffering from diabetes mellitus, insomnia, anxiety, depression etc. It is acts as a preventive measure in cardiac and pulmonary diseases. Hence it is useful as a preventive measure and also as a treatment. Physician should apply it during treating the patients as per applicable.

REFERENCES

- Effect of suryanamaskar on han healthy volunteers in http://statperson.com/journal/scienceandtechnology/Article/Volume12Issue2/12_2_5.pdf
- Ghanekar B. G, Vaidakiya Subhashit Sahityani, Chaukhambha Publication Varanasi, 7th.ed.1999. p. 25, verse no. 35.
- Ghanekar B. G, Vaidakiya Subhashit Sahityani, Chaukhambha Publication Varanasi, 7th.ed.1999. p. 25, verse no.9
- Ghanekar B. G, Vaidakiya Subhashit Sahityani, Chaukhambha Publication Varanasi, 7th. ed.1999. p. 24, verse no. 06 http://en.wikipedia.org/wiki/Aditya_Hridayam assessed on 22.10.2014
- http://en.wikipedia.org/wiki/Surya_Namaskar_Origins
- http://health.sulekha.com/salute-the-sun-with-surya-namaskar-for-a-healthy-body-and-mind_599038_blog.Assesed on 18.06.2014.
- <http://lex123.hubpages.com/hub/Amazing-Benefits-of-Surya-Namaskara> assesed on 26.09.2014
- <http://pe.lsrj.in/UploadedArticles/159.pdf> assesed on 24.10.2014.
- <http://recent-science.com/index.php/trst/article/viewFile/7397/3798> assessed on 22.09.2014.
- <http://rnarayanaswami.net/yogapdf/SURYANAMASKAR.pdf> assessed on 25.10.2014.
- <http://www.healthandyoga.com/html/news/surya.aspx> assessed on 25.09.2014.
- <http://www.healthandyoga.com/html/news/surya.aspx> assessed on 26.09.2014.
- <http://www.isrj.net/ArticleFullText.aspx?ArticleID=4656> assessed on 18.06.2014.
- <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3289222/asses> ed on 20.09.2014
- <http://www.ssmrae.com/admin/images/3dd1ddcfa4d6081bdaf986b23f6c0694.pdf> assessed on 22.10.2014
- <http://www.yogajournal.com/practice/2746> assessed on 18.06.2014.
- <http://yogahathayoga.com/cardiovascular-benefits-of-surya-namaskar-2/> assessed on 18.06.2014.
- <http://yogahathayoga.com/surya-namaskar-to-lose-weight/> assessed on 19.08.2014.
- <https://vedicambassador.wordpress.com/tag/surya-namaskar/> assessed on 18.06.2014
- Reducing risk promoting healthy life, World health report, 2002 http://www.who.int/whr/2002/en/whr02_en.pdf assessed on 10.07.2014
- Vijay kumar Rai, Swasthavritta Vidyan, Chaukhambha publication New Delhi, 1st. ed. 2010 P. 390.
- Vijay kumar Rai, Swasthavritta Vidyan, Chaukhambha publication New Delhi, 1st. ed. 2010: P.328
- Vijay kumar Rai, Swasthavritta Vidyan, Chaukhambha publication New Delhi, 1st. ed. 2010: P.393, 394.
- Vijay kumar Rai, Swasthavritta Vidyan, Chaukhambha publication New Delhi, 1st.ed. 2010 P. 390-392.
- Vijay kumar Rai, Swasthavritta Vidyan, Chaukhambha publication New Delhi, 1st. ed. 2010 P. 393. <http://recent-science.com/index.php/trst/article/viewFile/7397/3798> assesed on 22.10.2014.