

## A Role Of 'Surya Namaskara' For Good Health

**Vd.Manisha Nikam,**

Professor,

Swasthvrutta Dept,

Aditya Ayurved Mahavidyalaya, Beed

### Abstract:

*Surya Namaskara (Sun Salutation) Is An Ancient And Sacred Yogic Technique Of India For Expressing Gratitude To The Sun. Surya Namaskara Is A Set Of Twelve (12) Asanas Or Poses. It Is Done Preferably In The Morning I.E., During Sunrise Facing Towards The Rising Sun. There Are Various Benefits On Different Systems Of The Body Which Includes Respiratory, Cardiovascular, Endocrine, Musculoskeletal, Nervous System As Well As Gastrointestinal System. In The Process Of Surya Namaskara, Most Benefited Organs Are Back Specially Backbone, Spinal Cord, Legs, Throat, Lungs, Heart, Liver, Stomach, Intestine And Skin Etc. Each And Every Cell And Tissues Of The Body Get Revitalizes And Regenerates Because Of Practicing Regular Surya Namaskara Therefore, The Experts Recommends Surya Namaskara For The Healthy Life. Practicing Regular Surya Namaskara, When It Is Done At Fast Pace, It Acts On Cardiovascular System By Improving Blood Circulation Throughout The Body Up To Organic Level. It Maintains Health And Makes The Body Free From The Diseases. It Gives Strength, Flexibility, Vitality To The Body. When It Is Done At Slow Pace, It Relaxes Muscles And Is A Form Of Meditation. Various Asanas Included In The Surya Namaskara, Help To Burn Extra Body Fat On Belly, Buttocks, Back By Activating Fat Metabolism And Normalizing Hormonal Imbalance. It Suppresses Menstrual Irregularity In Women And Also Facilitates Easy Child Birth. It Helps To Keep The Mind Stress Free, Calm And Illuminated. Thus, A Regular Practice Of Surya Namaskaras Is Recommended To Keep The Body And Mind Healthy. Though The Surya Namaskara Steps Are Very Scientific And Practical Science From Ancient Time But Still It Needs Advance Modern Scientific Justification To Spread It Globally. Nowadays, Every Year Whole World Celebrates **The International Yoga Day On 21st June**. Keeping This Thing In To Mind The Present Review Has Been Framed To Revalidate Sacred Steps Of Surya Namaskara On The Basis Of Available Evidence Based Study.*

**Key Words:** *Surya Namaskara, Yogic Technique, Twelve Asanas, Health Benefits, Scientific Justification.*

### Introduction:

**S**urya Namaskara is an ancient yogic practice to worship Sun. Surya means 'Sun' and the word 'Namaskara' means 'Salutation' or to greet. Therefore, it is known as Surya Namaskar or Sun Salutation. Thousands of years ago, this specific postural and breathing protocol was developed by a great 'Patanjali' and there disciples. For good health, stamina, mental and physical stability, strength, they advised all human beings to practice it in the morning in front of the rising sun, facing towards the sun on an empty stomach.

Surya Namaskar is a series of asanas with strict breathing techniques. It revitalizes each and every cell or tissue of the body. It gives physical strength, flexibility and mental calmness. Surya Namaskara includes a series of asanas (poses) like Pranamasana, Hastautthan Asana, Hastapad Asana, Ashwasanchalan Asana, Ashtang Namaskar,

Bhujangasan and Parvatasana. While practicing Surya Namaskara, Pranayama is synchronised with asanas and Mantras are pronounced at the start of each asana. In each mantra, twelve (12) names of Sun are chanted to worship the Sun.

By practicing these asanas, the abdominal muscles get stretched and compressed which results in complete massage to the organs including stomach, intestines, pancreas to get toned and to work perfectly or properly. If the organs have some kind of illness then, Surya Namaskara retuned and revitalizes them. Surya Namaskar stimulates peristaltic movements of the intestines helping in removing of an excess gas and constipation.

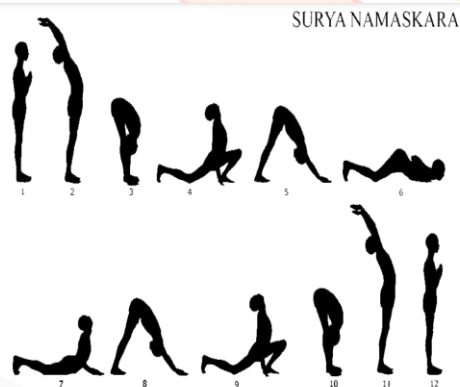
The spinal column is bent and stretched in a specific manner during practicing Surya Namaskara. It also stimulates blood circulation to spinal canal, brain resulting in healthy and tuned nervous system. Whole musculoskeletal system get stretched and contracted in specific manner because of Surya

Namaskar which provides more strength and flexibility.

Performing these asanas regularly results in glowing of the skin, as the perspiration cleanses the pores of the skin. The clean complexion of the practitioners is a sign of good skin health. It increases myocardial contractility and strength, therefore the cardiac output increased. It detoxes the body by eliminating hidden toxins. It acts as detoxifying agent by getting rid of enormous quantity of carbon dioxide and other toxic gases. Due to Surya Namaskar, the lungs ventilates and oxygenates the blood a thoroughly. That results in improved contractility of respiratory tree and increases vital capacity. It balances the whole endocrinal system by direct massaging of the gland by increase blood flow. Surya Namaskara gives peace to the mind and reduces emotional stress.

Surya Namaskar is an Indian traditional practice of yoga but nowadays, the word ‘Surya Namaskar’ and its type of exercise is becoming famous all over the world because of its benefits. Surya Namaskar is the practice which is safe, natural, alternative, cheap and don’t need any equipment, as the modern medicines having remarkable side effects. There are some scientific studies on the effects of the Surya Namaskara on physiological and psychological parameters but they are few. So the aim of the present review to analyse steps of Surya Namaskara and to establish its effect on the body based on previous studies.

**Asanas (Poses) Of Surya Namaskar:**



Surya Namaskar is a traditional Indian yogic practice of series of twelve (12) physical poses. These poses encompass periodic forward and backward bending along with deep exhalation and inhalation respectively to the maximum possible extent.

**1. Pranamasana (Prayer Pose) 1<sup>st</sup> and 12<sup>th</sup>**

This is a pose of doing ‘Pranama’ i.e. ‘Anjali mudra’ standing straight on both legs and broaden the shoulder with hands by side and relax. Now inhale and lift both hands together and bring in ‘Namaskara’ position (mudra) as you exhale.

Benefits: It gives relaxation from anxiety and mental stress. Gives calmness and increases concentration of the mind in the beginning.

**2. Hasta uttanasana (Raised Arm pose) 2<sup>nd</sup> and 11<sup>th</sup>**

From prayer pose, raise the hands up and stretch the body from toes to tip of finger backward keeping the biceps close to the ears.

Benefits: It gives strength to abdominal, respiratory muscles and intercostal muscles also. It supports the respiratory system and improves the digestive functions. It relieves anxiety and fatigue especially in asthma.

**3. Hast Padasana (Hand to foot) 3<sup>rd</sup> and 10<sup>th</sup>**

Now bending down from the waist and touch the floor with both palms, keeping the back erect. One should try to keep the knees straight and touch head to knees.

Benefits: It is benefits the back muscles and increases the flexibility. It stretches hips, hamstrings and calves. Also strengthens the thighs, knees. By acting on the abdominal muscles it loosen the excess belly fat.

**4. Ashwa Sanchalanasana (Equestrian pose) 4<sup>th</sup> and 9<sup>th</sup>:**

By breathing in push back the left leg as possible and should be touched to the ground along with foot bend down. The right knee should be in between both the palms. Then look up and stay in the position. Straighten the feet by balancing it on the floor with the help of toes.

Benefits: It balances the central nervous system, strengthens the spine. It tones the abdominal organs like kidney, liver. It increases will power. It increases the lung power.

**5. Parvatasana (The Mountain Pose) 5<sup>th</sup> and 8<sup>th</sup>:**

The pose is like ‘Parvata’ or mountain. By exhaling, take the right leg backward from Ashwa Sanchal anasana pose and place it parallel to left leg. Raise the buttocks or wrist at the same time. Place the hands straight, supporting the

weight of the body. The head should be placed between hands.

Benefits: It introduces a good stretch to spine. It tones the peripheral nervous system .It strengthens the upper and lower limb muscles. It helps in building strength and endurance of arms, shoulder, wrists.

**6. Ashtang Namaskar (Salutation with Eight Parts of the Body) 6<sup>th</sup> and 9<sup>th</sup>:**

Gently bring the knees down on the floor, push the hips backwards and sliding forward rest the chin and chest down on the floor. Stay in this position and keep touching the eight body parts like both the palms, both feet, knees, chest and chin to the floor.

Benefits: It strengthens the upper and lower limb muscles and respiratory muscles.

**7. Bhujangasana (Cobra Pose) 7<sup>th</sup> pose:**

From this last position, raise the chest up by sliding forwards. The hands are bent and look up towards the sky. In this pose, half of the body is in the air and rest is on the floor. This is Cobra pose i.e., Bhujangasana.

Benefits: It supports and strengthens the back especially lower back with highest compression to lumbar spine. It improves flexibility of the spine and muscles. It is supportive to respiratory, gastrointestinal, reproductive and urogenital systems and becomes beneficial in backache, sciatica, asthma and menstrual cycles.

There are certain chakras corresponding to each asanas. It is recommended to synchronize posture, breath, mantras and bring attention to certain chakras when performing Surya Namaskara. It needs complete devotion. Particular mantras are pronounced or chanted at the start of each Surya Namaskara. As Surya Namaskara is a series of 12 asanas, each of it is done with chanting a particular mantra. The twelve (12) different asanas of Surya Namaskara and the mantra are as follows,

Pose	Mantra	Meaning	Breathing Pattern
1.Pranamasana (Prayer Poses)	Om Mitray namah	Prostration to who is affectionate to all	Ucchavasa
2.Hastautthanana (Raised arm pose)	Om Ravaye namah	Prostration to him who	Shwasa

		The cause for change	
3.HastaPadasana (Hand to Foot Poses)	Om Suryay namah	Prostration to him who induces activity	Ucchavasa
4.Ashwa Sanchalan asana (Equestrian Pose)	Om Bhanave namah	Prostration to him who diffuses light	Shwasa
5.Parvatasana (The Mountain Pose)	Om Khagay namah	Prostration to him who moves in the sky	Ucchavasa
6.Ashtang Namaskar (Salute with 8 points)	Om Pushne namah	Prostration to him who nourishes all	Hold Shwasa
7.Bhujangasana (Cobra Pose)	Om Hiranyagarbhay namah	Prostration to him who contains everything	Shwasa
8.Parvatasana (The Mountain Pose)	Om Marichaye namah	Prostration to him who possesses rays	Ucchavasa
9. Ashwa Sanchalan asana (Equestrian Pose)	Om Adityay namah	Prostration to him who is God of god	Shwasa
10.Hastapadasana (Hand to Foot Pose)	Om Savitre namah	Prostration to him who produces everything	Ucchavasa
11.Hastauttanana (Raised Arms Pose)	Om Arkay namah	Prostration to him who is fit to be worshipped	Shwasa
12. Tadasana (Pranamasana)	Om Bhaskaray namah	Prostration to him who is the cause of luster	Ucchavasa

The twelve different asanas of Surya Namaskara, Chakras and their Beeja Mantra are as follows,

Asana	Chakras	Beeja Mantra
1.Pranamasana	Anahata (Hrudaya)	ॐ ह्रीं (Om Rhom)
2.HastaUttanasana	Vishuddhi (Throat)	ॐ ह्रीं (Om Rhim)
3.HastaPadasana	Swadhishtana (Sacrum)	ॐ ह्रीं (Om Rhum)
4.AshwaSanchalanasana	Adnya (3 <sup>rd</sup> Eye)	ॐ ह्रीं (Om Rhaim)
5.Parvatasana	Vishuddhi (Throat)	ॐ ह्रीं (Om Rham)
6.Ashtanga Namaskara	Manipur (Solar Plexus)	ॐ ह्रीं: (Om Rhah)
7.Bhujangasana	Swadhishtana (Sacrum)	ॐ ह्रीं (Om Rhom)
8.Adhomukhashvansana	Vishuddhi (Throat)	ॐ ह्रीं (Om Rhim)
9.AshwaSanchalanasana	Adnya (3 <sup>rd</sup> Eye)	ॐ ह्रीं (Om Rhum)
10.HastaPadasana	Swadhishtana (Sacrum)	ॐ ह्रीं (Om Rhaim)
11.HastaUttanasana	Vishuddhi (Throat)	ॐ ह्रीं (Om Rham)
12.Pranamasana	Anahat (Heart)	ॐ ह्रीं: (Om Rhah)

One should thank the Sun God and the nature also, for taking care of us by chanting Mantras. This chanting makes the Surya Namaskara more and more spiritual and effective. It effects the body and mind

minutely and vitally. Mantras represent 12 zodiac signs also and supply energy to the body.

**Benefits of the Surya Namaskara:**

Surya Namaskara accords overall benefits which are as follows,

1. **Surya Namaskara** is ideally done in early morning facing the rising sun, as the sunrays are a rich source of vitamin D and helps to clear the vision. The ultraviolet rays are not very harsh during this time. So the skin doesn't get over exposure to sun.
2. These asanas improves one's posture, also gives proper workout to the body and thus helps in losing unwanted body flab.
3. Regular Surya Namaskara helps to lose excess body fat by activating fat metabolism and normalizing hormonal imbalances.
4. It balances the systems like respiratory, cardiovascular, gastrointestinal, endocrinal and musculoskeletal system to function better.
5. It gives exercise to the whole body, hence joints become strong and show increased flexibility.
6. It promotes sleep and calms, anxiety removes lethargy, vanishes all mental and physical fatigue.
7. Revives and maintains the spirit of youthfulness.
8. Practicing it, helps to regulate menstrual cycles and easier childbirth.
9. Surya Namaskara activates the 'Pingala Nadi' (Surya Nadi) which enhances the energy level in the body
10. In women, it stimulates the breasts to help firmness normally. Restores any lost elasticity through stimulation of glands and strengthening of pectoral muscles. All new moms can use more stamina and strength to give the best to their babies while breastfeeding.
11. It increases mobility in all joints.
12. Prevents loss of hair and graying.
13. Lends grace and ease of movements of the body.
14. Eliminates unpleasant smell of the body.
15. Refreshes the skin, prevents skin disorders. By boosting the blood circulation to the skin and face, gives its radiant glow back. It prevents wrinkles and early aging.

**Physiological Effect of Surya Namaskara on the Body:**

**Effect on musculoskeletal system:**

Regular practice of Surya Namaskara requires four times more energy than the daily requirement. By acting a good fat burner, it burns the fat over hips, belly and abdomen. It improves flexibility of muscles especially legs, back, chest, buttocks. Psoas muscle i.e., major hip flexor connects lesser trochanter to all L1 to L5 and T12. It is a compilation of scientifically well sequenced postures designed in such a way that involuntary muscles and joints undergo various degrees compression and extension and movements of different parts. Eg. Bhujangasana gives nice back bending to spine with highest compression to the lumbar spine. While Adhomukhasvanasana introduces good stretch to entire spine and hamstring muscles. Regular Surya Namaskara can significantly increase Handgrip, strength and endurance.

**1. Effects on Respiratory system:**

Surya Namaskara helps improving the functioning of the lungs better than walking. Chaturanga - dandasana, Bhujangasana helps opening of chest cavity i.e., it improves strength of intercostal muscles, trapezius which leads to increased vital capacity and contractility of lungs and thus the health of the lungs. It increases maximum inspiratory pressure and maximum expiratory pressure as it is a good breath coordination performance done in steps. It changes forced vital capacity (FVC), forced expiratory vital volume in 1<sup>st</sup> second (FEV1), peak expiratory flow rate (PEFR) and vital capacity (VC).

**2. Effects on Cardiovascular System:**

Daily Surya Namaskara practice, improves cardiovascular efficiency and fitness e.g. Adhomukhasvanasana, uttanasana induces inversion of blood to heart increasing blood flow to heart. Blood circulation increases all over body up to organic, tissue and cellular level. Surya Namaskara shows dramatic changes in systematic and diastolic blood pressure, respiratory and heart rate.

**3. Effects on Endocrines:**

It modulates endocrine system of the body; primarily it focuses on pancreas, thyroid, adrenal and pituitary gland. It is very beneficial in Obesity, Diabetes Mellitus, Hypothyroidism and menstrual disorders. Regular workout makes stronger abdominal muscles and less painful experience of menstrual cycle.

**4. Effects on Nervous system:**

Autonomous nervous system and peripheral nervous system which is beneficial to neuronal issues. It also tones up central nervous system and improves memory, different neuronal weakness. It is effective on lower backache, Diabetes Mellitus.

**5. Effects on Gastrointestinal system:**

It helps in smooth running of digestive system. Increasing the blood flow to the system, the functioning of the intestines makes better. It tones up the digestive system by alternate stretching and compression of abdominal organs. Thus, helps in release of trapped gas from the system. It activates digestion and gets rid of constipation, dyspepsia and other gastrointestinal problems.

**Effects on Mind:**

Surya Namaskara carried out in silence with complete involvement always helps calming the mind and to relieve anxiety. Regular workout improves mental health. It exerts positive and better effect on both physical and psychological variables. Its different poses breathing patterns and chanting the mantras produces calm, relax, more stable and stress free mind. It increases creativity, intuitive abilities, decision making leadership skills and confidence. So children should do Surya Namaskara during examinations especially as it relieves tension and anxiety. It improves sleeping pattern also. By helping in calm mind, gives a better and more peaceful sleep at night and battles insomnia.

**Effects of Surya Namaskara on various biochemical parameters:**

Sedentary lifestyle or habits and unhealthy dietary patterns, psychological stress increases the risk and severity of Diabetes Mellitus. Lack of physical activity increases the risk of Diabetes Mellitus by 3 times. Surya Namaskara is very useful in such life style diseases like Diabetes Mellitus. **Psycho – neuro - endocrine and immune** mechanisms are involved in the beneficial effects of yoga on Diabetes Mellitus. Regular workout helps to attain glycemic control and reduces the risk of diabetic complications. Surya Namaskara improves blood circulation and management of insulin in the body. It stimulates insulin production through brain signaling. If it is performed at slow pace i.e., six rounds per minute gives major effects. Surya Namaskara reduces fasting BSL, postprandial BSL

glycosylated haemoglobin HBA1C level. It reduces oxidative stress in the body which plays an essential role in insulin resistance. A positive impact on Autonomous nervous system of Diabetes Mellitus patients is noticeable. It also improves the lipid profile in these patients and has a supportive role in diabetic complications. This results in reduction of weight and waist-hip ratio. Surya Namaskara provides a natural method to attain a healthy Body Mass Index.

**Surya Namaskara and calories:**

Each set of Surya Namaskara has 12 asanas. So when it repeated 12 times from both sides, 288 poses one can get done. It is much better, when 288 poses are done in just 20 minutes. Doing one round of Surya Namaskara burns approximately 13.90 cal. It is very useful in calorie burning other than these workouts,

WORKOUT	CALORIES BURNT
<b>Weight lifting</b>	120 cal
<b>Tennis</b>	230 cal
<b>Basketball</b>	266 cal
<b>Football</b>	290 cal
<b>Cycling at 14-15mph</b>	332 cal
<b>Rock climbing</b>	363 cal
<b>Running 7.5mph</b>	411 cal
<b>SURYA NAMASKARA</b>	<b>416 cal</b>

**Contraindications:**

1. Pregnant women should not perform Surya Namaskara as it puts pressure on the back and abdomen, harming both mothers and foetus.
2. Avoid it performing while menstruating.
3. Can avoid it if there is wrist injury.
4. Heart patient and high blood pressure patients should consult their doctor.
5. Any back problem, perform under the guidance.
6. Arthritis- As it involves the knee movements, must perform with caution if knee stiffness is there.

**Conclusion:**

Surya Namaskara is a sequence of asanas. Its origin lies in a worshipping of Surya, the Hindu deity. This sequence of movements can be practiced on varying level of awareness ranging from that of physical exercise in various styles to a complete sadhana which incorporates asana, pranayama,

mantras and chakra meditation. Surya Namaskara improves strength, flexibility of musculoskeletal system balances endocrinal system and metabolic function, tones central nervous system, supports urogenital system, boosts gastrointestinal system. Keeps mind calm, attentive and stress free. Lend grace and ease of movements of body. Revives and maintains the spirit of youthfulness. These thousands of years old tradition of yogic practice explains its therapeutic potential. Thus it should be a need to incorporate Surya Namaskara in modern life style for healthy mind and body.

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