

IMPACT OF SUN SALUTATION IN HUMAN BODY

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ABSTRACT

An Old and Sacred Indian Yogic Technique Called Surya Namaskar (Sun Salutation) Is Used to Express Gratitude to The Sun. A set of twelve (12) asanas or poses is known as the Surya Namaskar. It is preferably done in the morning, that is, at sunrise while facing the rising sun. There are numerous advantages for various bodily systems. It also includes the digestive, respiratory, cardiovascular, endocrine, muscular, and nervous systems. The Back, especially the backbone, spinal cord, and legs, are the most benefited organs during the Surya Namaskar process. The skin, stomach, intestine, liver, lungs, and heart, among other organs. The body's cells and tissues all receive Regular Surya Namaskar practise revitalises and regenerates. Consequently, Surya is recommended by experts. The Experts Recommends Surya Namaskar for The Healthy Life. Practicing Regular Surya Namaskar, 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 Namaskar, 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. Therefore, Surya Namaskar practise is advised to keep the body and mind healthy. Mind Sound. Despite The Surya Namaskar Steps Being Very Practical and Scientific from Ancient Time, it requires cutting-edge modern scientific support in order to be widely adopted. These days, the entire world celebrates On June 21, it is International Yoga Day. Having this in mind, the current review has been constructed to Revalidate the Surya Namaskar sacred steps in light of the research that is currently available.

KEYWORDS: Surya Namaskar, Yogic Technique, Twelve Asanas, Health Benefits.

INTRODUCTION

Surya Namaskar or Sun Salutation is a sequential blend of 12 different yoga poses performed dynamically in synchrony with the breath. Although one can practice Surya namaskar at any time of the day, it would best to do it at sunrise as the sun rays help revitalize the body & the mind. Based on the requirement of the body, Surya namaskar can be done in 3 speed variation – slow, medium and fast pace.^[1]

- The slow pace helps increase body flexibility,
- The medium pace helps in muscle toning, The rapid speed aids with weight loss and provides a great cardiovascular exercise.

Develop your sixth sense with Sun Salutations with Surya Namaskar and regular reflexes, the solar plexus rises from the almond extension to the palm.^[2] Sunlight-based plexus expansion, also known as second thinking, enhances our natural ability to become sharper and more focused. Solar plexus stress again leads to sadness and other negative tendencies.^[3] The complex benefits of Surya Namaskar keep the body and brain healthy. Since then, the standard Surya Namaskar routine has been highly touted by all yoga experts. These Surya Namaskar tips can also improve your exercise and lead to better results.^[4]

The Science Behind Surya Namaskar It is said (by Rishis in ancient India) that unique parts of the body are ruled by devas (divine motifs or shining lights). The solar plexus (located behind the navel and essential to the human body) is said to be associated with the sun. This is the main reason behind the ancient proposal of rishis for the behaviour of Surya Namaskar, stating that the constant routine of this method enhances the solar plexus and thus expands creativity and instinctive abilities.^[5]

METHODOLOGY

1. Pranamasana (prayer posture) 1 and 12th

This is the posture of the person who performs the "pranama", ie. "Anjali mudra" Stand with straight legs and straight shoulders and loose hands by your side. Now join hands and exhale "Namaskara" posture (mudra).^[6]

Benefits: Provides relaxation from anxiety and mental tension at first brings calmness and increases concentration.

2. Hasta uttanasana (raised arms pose) 2 and 11th

After the prayer, raise your hands and pull your body back from your toes to your fingertips keeping your biceps close of the ears Effectiveness:

Benefits: strengthening of the abdominal, respiratory and intercostal muscles supports the respiratory system and improves digestion can relieve anxiety and fatigue, especially in asthma.

3. Hast Padasana (hands to feet) 3 and 10th

Now bend from the waist, touch the floor with both palms, keeping the back straight. The person should try to keep the knee as straight as possible and allow the head to touch the knee.

Benefits: back muscles and increases flexibility. Stretches hips, hamstrings and calves. of the thighs and knees are also strained. Eliminate excess abdominal fat by working the abdominal muscles.

4. AshwaSanchalanasana (Horse) 4 and 9th

Inhale to push the left leg back as far as possible, the foot should be bent to touch the floor. The right knee should be between the palms So look for and stick with it. Extend your feet with your toes to balance them on the ground. Benefits: Balances the central nervous system, strengthens the spine. It regulates, abdominal organs such as the kidneys and liver. Increases willpower. increases lung capacity.

5. Parvatasana (mountain pose) 5 and 8th

The pose is similar to the Parvata or mountain. On exhalation, stretch the right leg back from Asana Ashwa Sanchal Pose and bring it parallel to the of the left leg. Lift your hips or wrists at the same time. Put your right hand and support weight The head must be placed between the hands.

Benefits: Stretches the spine well. regulates the peripheral nervous system. Strengthens the muscles of

the upper and lower limbs. Helps build strength and endurance in the arms, shoulder and wrist.

6. Ashtanga Namaskar (Salutations with Eight Parts of the Body) 6 and 9th

Place the knees gently on the floor, Push the hips back and slide forward, Chin and chest on the floor. Stay in this position and continue to touch the eight parts of the body, such as the palms, feet, knees, chest and chin, until you reach the floor.

Benefits: Strengthens the musculature and respiratory muscles of the upper part and lower extremities.

7. Bhujangasana (Cobra Pose) 7th

From the last position, lift your chest and slide forward into position. Bring your hands together and look at the sky. In this position, half of the body of is in the air and the rest on the ground. This is the position of the Cobra.

Benefits: Supports and strengthens the back, especially the lower back where the lumbar spine is most compressed. Improves the flexibility of the spine and muscles. It supports the respiratory, digestive, reproductive and genitourinary systems and is beneficial for back pain, sciatica, asthma and menstruation.

DISCUSSION

We've talked about the Surya namaskar health advantages here.

1. Helps in weight loss {obesity}

Fast walking Surya namaskar is similar to physical aerobic exercises that help in weight loss. Yoga poses followed in Surya namaskar have a high dynamic coefficient which can help in weight loss.^[7]

2. Improves cardiovascular health

Surya namaskar helps improve blood circulation and strengthens the heart. It also improves resting cardiovascular parameters such as systolic blood pressure, diastolic blood pressure and pulse pressure. The daily practice of Surya Namaskar to improve cardiovascular efficiency and fitness as Adhomukhashvanasana, uttanasana stimulates blood flow to the heart, increases blood flow to the heart. Blood circulation increases throughout the body to the level of organs, tissues and cells. Surya Namaskara shows systemic and diastolic blood pressure, respiration and heart rate.^[8]

3. Improves respiratory function

Surya namaskar exercise can improve lung function parameters such as forced vital capacity, forced expiratory volume (in 1 second) and peak expiratory flow. In addition to respiratory pressure parameters, maximum inspiratory pressure and maximum expiratory pressure (used for achieve respiratory muscle weakness) strengthened by daily exercises Surya namaskar. {Surya Namaskar helps to improve lung function more than walking. Chaturanga - dandasana, Bhujangasana helps to open the chest cavity ie. It increases the strength of the intercostal muscles, the trapezius muscle, thereby

increasing lung capacity and contractility, thus improving lung health. It increases the maximum inspiratory pressure and the maximum expiratory pressure because it is a good representation of the staged respiratory coordination. Change forced vital capacity (FVC), forced expiratory vital capacity in 1. seconds (FEV1), forced expiratory flow (PEFR) and vital capacity (VC).^[8]

4. Hormone activation

Surya namaskar activates and stimulates glands such as the adrenal and pituitary, thereby maintaining optimal secretion of growth hormone and dehydroepiandrosterone sulphate. Surya namaskar also stimulates the thyroid gland and helps regulate menstruation.

5. Digestive Aid

Surya Namaskar yoga poses involve continuous stretching and compression of the body, including the digestive organs. Regular practice of Surya namaskar helps to stimulate the abdominal muscles and digestive juices, which in turn promote the excretion of stool.

6. Stress Relief

Surya namaskar helps regulate the connection between mind, body and soul by relieving exhausting stress and tense muscles. Therefore, exercising regularly can help reduce stress and increase energy levels.

7. Effects on the nervous system

The autonomic and peripheral nervous system, is useful for nervous problems. It also regulates the central nervous system and improves memory and various

neurological vulnerabilities. Effective for back pain and diabetes.

8. Effects on the digestive system

contributes to the proper functioning of the digestive system. By increasing blood flow to the system, improves intestinal function. The digestive system is alternately regulated by stretching the abdominal organs and compressing the. Therefore, it is beneficial to release trapped gas from the system. activates the digestive process and eliminates constipation, indigestion and other digestive problems.

9. Effects on the Mind

Surya Namaskar is performed in silence; full engagement always helps to calm the mind and relieve anxiety. Regular exercise can improve mental health. It has a positive and better effect on physical and psychological variables. Its different postures, breathing patterns and chanting mantras will produce a calm, relaxed, more stable and stress-free mind. It increases creativity, intuition, decision-making leadership and confidence. So, children should do Surya Namaskar during exams, especially as it relieves stress and anxiety. It can also improve sleep patterns. helps calm the mind for a better and restful night's sleep and helps fight insomnia.

10. Effects on the endocrine system

regulates the endocrine system of humans; focuses on the pancreas, thyroid, adrenal glands and the pituitary gland. It is very beneficial for obesity, diabetes, hypothyroidism and menstrual disorders. Regular exercise can lead to stronger abdominal muscles and less painful menstrual cycles.

1. <i>Pranamasana</i>	<i>Om Mitray namah</i>	<i>Anahata (Hrudaya)</i>
2. <i>HastaUttanasana</i>	<i>Om Ravaye namah</i>	<i>Vishuddhi (Throat)</i>
3. <i>HastaPadasana</i>	<i>Om Suryay nama</i>	<i>Swadhishthana (Sacrum)</i>
4. <i>AshwaSanchalanasana</i>	<i>Om Bhanave namah</i>	<i>Adnya (3rd Eye)</i>
5. <i>Parvatasana</i>	<i>Om Khagay namah</i>	<i>Vishuddhi (Throat)</i>
6. <i>Ashtanga Namaskar</i>	<i>Om Pushne namah</i>	<i>Manipur (Solar Plexus)</i>
7. <i>Bhujangasana</i>	<i>Om Hiranyagarbhay namah</i>	<i>Swadhishthana (Sacrum)</i>
8. <i>Adhomukhashvansana</i>	<i>Om Marichaye namah</i>	<i>Vishuddhi (Throat)</i>
9. <i>AshwaSanchalanasana</i>	<i>Om Adityay namah</i>	<i>Adnya (3rd Eye)</i>
10. <i>HastaPadasana</i>	<i>Om Savitre namah</i>	<i>Swadhishthana (Sacrum)</i>
11. <i>HastaUttanasana</i>	<i>Om Arkay namah</i>	<i>Vishuddhi (Throat)</i>
12. <i>Pranamasana</i>	<i>Om Bhaskaray namah</i>	<i>Anahat (Heart)</i>

Contraindications

However, if you start to feel short of breath or dizzy, take a break. Pregnant women should also not exercise, but they can continue during menstruation because it promotes digestion, energy flow and waste excretion.

1. A pregnant woman should not perform the Surya namaskar because it puts pressure on the back and the abdomen, which will harm the mother and the fetus.
2. Avoid doing it during menstruation.
3. Wrist injury can be avoided.

4. Patients with heart and blood pressure should consult a doctor.
5. Any background issues, under supervision.
6. Arthritis: As this involves movement of the knee, it should be done with caution if there is knee stiffness.

CONCLUSION

Benefits of Suryanamaskar Not yet discovered More Till today all the benefits of yoga are not known. It can effectively improve physical health, mental health and

effectively maintain proper and healthy secretion of various endocrine and endocrine hormones. can berecommended to patients because of the various health benefits of Surya namaskar. Renaissance and preserve the spirit of youth. This, -year-old yoga tradition explains its year-old healing potential. Hence, it is essential to incorporate Surya Namaskar into a modern lifestyle for a healthy mind and body.

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Conflict of interest

Authors declare no conflicts of interest.

REFERENCES

1. P. R. Ananda Balayogi Bhavanani 1, Kaviraja Udupa, Madanmohan, "A comparative study of slow and fast suryanamaskar on physiological function," *A Comp. study slow fast suryanamaskar Physiol. Funct.*, 2: 71-6. doi: 10.4103/0973-6131.85489.
2. "Impact of Surya Namaskar on the Human System | Open Access Journals." <https://www.rroij.com/open-access/impact-of-surya-namaskar-on-the-human-system-.php?aid=80420> (accessed Jun. 30, 2022).
3. Nobutaka Hirooka¹, T. T. LastName, and Frank D'Amico³, "Hirooka N. Health issues of physical activity in daily life, exercise and sedentary behavior among japa," *Heal. Issues Phys. Act. Dly. Life, Exerc. Sedentary Behav. among Japanese Residing Overseas*, Accessed: Oct. 10, 2022. [Online]. Available: <https://www.iomcworld.org/open-access/health-issues-of-physical-activity-in-daily-life-exercise-and-sedentarybehavior-among-japanese-residing-overseas-.pdf>
4. Filomena Palmieri¹ Giovanni Messinal and V. M. LastName, "Messina G, et al. Exercise causes muscle GLUT4 translocation in an insulin-independent manner. *Biol Med (Aligarh)*, 2015; S3: 007.," *Biology and Medicine*. <https://www.walshmedicalmedia.com/open-access/exercise-causes-muscle-glut4-translocation-in-an-insulin-independent-manner-0974-8369-1000s3007.pdf> (accessed Oct. 10, 2022).
5. "Effect of Surya Namaskar on Sustained Attention in School Children." <https://www.longdom.org/open-access/effect-of-surya-namaskar-on-sustained-attention-in-school-children-2157-7595.1000110.pdf> (accessed Oct. 10, 2022).
6. Swami Satyananda Saraswati, "Saraswati S. Suryanamaskara A-Technique of solar vitalization. Munger Yoga Publication Trust.1983.," *munger vihar*. <http://www.fuzzzyoga.yogi.center/pdf/yoga/Surya-Namaskara-A-Technique-of-Solar-Vitalization-Swami-Satyananda-Saraswati-text.pdf> (accessed Oct. 10, 2022).
7. "Surya Namaskar - How to do Sun Salutation with Steps | The Art of Living India." <https://www.artofliving.org/in-en/yoga/yoga-poses/sun-salutation> (accessed Oct. 10, 2022).
8. V. M. Nikam, "A Role Of 'Surya Namaskara' For Good Health," *A Role 'Surya Namaskara' Good Heal.*, vol. VOL-VII, no. ISSUE-II, [Online]. Available: https://www.aiirjournal.com/uploads/Articles/2020/03/4434_25.Vd.Manisha Nikam.pdf