

SURYANAMASKAR: A SCIENTIFIC APPROACH WITH DETAILED MUSCULAR INVOLVEMENT

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ABSTRACT

Suryanamaskar, or Sun Salutation, is a dynamic series of twelve yogic postures performed in a continuous sequence, traditionally practiced to express gratitude to the sun and invigorate the body and mind. Beyond its spiritual significance, it serves as a comprehensive exercise regimen that integrates asana (posture), pranayama (breath control), and dhyana (meditation). This article presents a systematic scientific analysis of Suryanamaskar with an emphasis on the muscular engagement in each posture. It also outlines a standardized method for practice, bridging traditional yogic principles with contemporary anatomical understanding. The practice improves musculoskeletal coordination, flexibility, and internal physiological functions, offering a holistic wellness approach for modern lifestyle disorders.

KEYWORDS: Suryanamaskar, Muscular Anatomy, Yoga, Sun Salutation, Postural Alignment.

INTRODUCTION

Suryanamaskar is a foundational yogic practice that synthesizes twelve classical postures into a dynamic flow. Each movement is synchronized with specific phases of breathing, resulting in enhanced mind-body awareness. Rooted in Indian yogic tradition, the practice holds spiritual, therapeutic, and preventive health value. It is often recommended in Ayurveda for maintaining doshic balance, particularly in pacifying Kapha and Vata. From a modern perspective, Suryanamaskar activates multiple muscle groups, strengthens the cardiovascular system, and supports endocrine regulation. Regular practice also benefits mental health by reducing stress and anxiety through mindful breathing and movement coordination.

AIM AND OBJECTIVES

Aim

To scientifically evaluate the muscular engagement and procedural structure of Suryanamaskar.

METHODOLOGY

- **Study Type:** Descriptive anatomical review.
- **Data Sources:** Yogic texts (e.g., Hatha Yoga Pradipika, Gheranda Samhita), anatomy and physiology manuals, peer-reviewed yoga studies.
- **Method**
 - Description of posture, breath, and alignment.
 - Identification of primary and secondary muscle groups involved.
 - Interpretation of systemic effects per posture.

Brief Procedure of Suryanamaskara

- **Time of Practice:** Ideally at sunrise, on an empty stomach.
- **Direction:** Face east, preferably outdoors or in a ventilated space.
- **Sequence:** A full practice includes 12 steps, performed in a flow with controlled breathing. One complete round consists of two sequences — alternating the leg used in steps 4 and 9 (right then left).
- **Repetition:** Beginners may start with 3–6 rounds; advanced practitioners may perform 12–24 rounds daily.
- **Breath Coordination:** Each step is synchronized with inhalation or exhalation.
- **Cautions:** Avoid during fever, acute illness, menstruation, pregnancy (without supervision), or recent surgery.

Suryanamaskar with Muscle Involvement

1. Pranamasana (Prayer Pose)

- **Breath:** Normal
- **Muscles:** Postural muscles (erector spinae, trapezius, rhomboids)
- **Action:** Grounding and centering; improves posture.

2. Hastauttanasana (Raised Arms Pose)

- **Breath:** Inhale
- **Muscles:** Deltoids, intercostals, latissimus dorsi, spinal extensors
- **Action:** Expands chest; stretches abdomen and upper back.

3. Padahastanasana (Hand to Foot Pose)

- **Breath:** Exhale
- **Muscles:** Hamstrings, gluteus maximus, gastrocnemius, erector spinae
- **Action:** Stretches posterior chain and improves spinal flexibility.

4. Ashwa Sanchalanasana (Equestrian Pose)

- **Breath:** Inhale
- **Muscles:** Hip flexors, quadriceps, gluteus maximus
- **Action:** Opens hip flexors; stabilizes lower body.

5. Dandasana (Plank Pose)

- **Breath:** Retain
- **Muscles:** Deltoids, triceps, abdominals, gluteals
- **Action:** Strengthens core and arms; enhances stability.

6. Ashtanga Namaskara (Eight-Limbed Pose)

- **Breath:** Exhale
- **Muscles:** Pectorals, biceps, spinal extensors
- **Action:** Activates upper back and arms; increases arm endurance.

7. Bhujangasana (Cobra Pose)

- **Breath:** Inhale

- **Muscles:** Spinal extensors, gluteus maximus, trapezius
- **Action:** Opens chest; strengthens lumbar region.

8. Parvatasana (Mountain Pose)

- **Breath:** Exhale
- **Muscles:** Hamstrings, calves, deltoids, latissimus dorsi
- **Action:** Inverted stretch; improves leg and shoulder flexibility.

9. Ashwa Sanchalanasana (Other Leg Forward)

- **Breath:** Inhale
- **Muscles:** Same as Step 4 (opposite leg)
- **Action:** Maintains bilateral muscular balance.

10. Padahastanasana (Repeat)

- **Breath:** Exhale
- **Muscles:** Same as Step 3
- **Action:** Re-stretches posterior body.

11. Hastauttanasana (Repeat)

- **Breath:** Inhale
- **Muscles:** Same as Step 2
- **Action:** Re-opens the chest and aligns posture.

12. Pranamasana (Repeat)

- **Breath:** Exhale
- **Muscles:** Same as Step 1
- **Action:** Completes the cycle; re-centers the mind.

DISCUSSION

Suryanamaskar is a complete exercise that works on both the body and mind. Each of its 12 steps helps stretch and strengthen different muscles like the legs, back, arms, and stomach. It also improves flexibility, posture, and balance.

When we move with the breath, it increases oxygen in the body, improves blood flow, and helps in better functioning of the heart, lungs, and brain. It also supports digestion and boosts energy.

According to Ayurveda, Suryanamaskar helps balance the three doshas—it reduces heaviness (Kapha), improves digestion and metabolism (Pitta), and calms overactivity and anxiety (Vata). It also clears body channels (srotas), increases digestive fire (Agni), and promotes a calm and focused mind (Sattva guna).

In short, Suryanamaskar is not just a physical workout—it is a natural and powerful way to keep the body healthy and the mind peaceful. It brings together the wisdom of yoga and Ayurveda in one daily practice.

CONCLUSION

Suryanamaskar is an integrative practice that harmonizes physical, physiological, and psychological domains. Each of the twelve postures stimulates specific muscle

groups and organ systems. Regular and mindful practice enhances strength, flexibility, respiration, and metabolism. For BAMS students and practitioners, understanding Suryanamaskara from both yogic and scientific perspectives promotes a deeper appreciation and effective application in personal health routines and patient care.

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