

Decoding *Vāta-sāra* in *Sūrya-namaskāra* and a Novel Interpretation of *Kākī-mudrā*

Abstract

Sūrya-namaskāra, the widely practiced yogic sequence of 12 *āsanas*, is conventionally recognized for its musculoskeletal and cardiovascular benefits. This paper presents a conceptual hypothesis that the traditional sequence may encode an ancient internal practice known as *Vāta-sāra*, involving the deliberate ingestion of air into the gastrointestinal (GI) tract. Based on anatomical, physiological, and experiential observations, we reinterpret *Kākī-mudrā* as a technique that facilitates controlled air entry into the stomach. Preliminary demonstrations, including auscultation and radiographic imaging, suggest a measurable increase in gastric air volume following this maneuver, indicating its physiological plausibility. This conceptual framework explores potential mechanisms through which GI air might influence hormonal regulation – notably ghrelin suppression and glucagon-like peptide-1 stimulation – and proposes possible antimicrobial implications against pathogens such as *Helicobacter pylori* and *Entamoeba histolytica*. These observations are intended to stimulate further scientific inquiry rather than to serve as controlled experimental proof.

Keywords: Chronic amebiasis, gastrointestinal air, ghrelin, glucagon-like peptide-1, *Helicobacter pylori*, integrative medicine, *Kākī-mudrā*, *Sūrya-namaskāra*, *Vāta-sāra*, yoga physiology

Introduction

Yogic practices in ancient India have long been recognized for addressing both external and internal dimensions of health. *Sūrya-namaskāra* (sun salutation) is among the most practiced sequences, comprising 12 *āsanas* performed rhythmically with coordinated breathing. While its cardiovascular and musculoskeletal benefits are well documented,^[1,2] this paper proposes a novel hypothesis: that the sequence encodes an internal physiological mechanism, *Vāta-sāra*, designed to guide ingested air into the gastrointestinal (GI) tract.

Traditional yogic literature mentions *Vāta-sāra-dhautī* as an internal cleansing practice involving air ingestion, but modern interpretations often lack a mechanistic framework. This paper aims to reinterpret *Sūrya-namaskāra* through this lens, suggesting that its alternating upright and inverted postures may facilitate deliberate air movement within the digestive tract. The intent of this paper is to present a conceptual framework grounded in

anatomical plausibility and supported by preliminary qualitative observations.

Methods

Observational analysis of *Sūrya-namaskāra*

Each of the 12 *āsanas* was analyzed with respect to trunk orientation and potential influence on intra-abdominal air dynamics. Upright positions (e.g., *Hasta-uttānāsana*) appear suitable for air ingestion, while inverted or semi-inverted postures (e.g., *Pāda-hastāsana* and *Parvatāsana*) may assist in guiding air downward to the pylorus and thence into the intestines.

Reinterpretation of *Kākī-mudrā*

Conventionally described as “making the mouth like a crow’s beak and drinking air,” *Kākī-mudrā* was reinterpreted using an anatomical motion framework [Figure 1]. A forward-and-backward neck movement resembling a crow’s pecking action facilitates alignment of the pharyngeal and esophageal axes, assisting controlled air ingestion. This maneuver was practiced in conjunction with relaxed abdominal musculature and expanded thoracic cavity.

Prakash Chintamani Malshe

Department of Medicine,
Antar Prakash Centre for Yoga,
Haridwar, Uttarakhand, India

Address for correspondence:

Dr. Prakash Chintamani
Malshe,
Antar Prakash Centre for Yoga,
SF-19, 20, Surya Complex,
Ranipur Mode, Haridwar,
Uttarakhand, India.
E-mail: prakashmalshe@
rediffmail.com

Access this article online

Website: <https://journals.lww.com/IJOY>

DOI: 10.4103/ijoy.ijoy_217_25

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How to cite this article: Malshe PC. Decoding *Vāta-sāra* in *Sūrya-namaskāra* and a novel interpretation of *Kākī-mudrā*. Int J Yoga 0;0:0.

Submitted: 12-Aug-2025

Revised: 23-Nov-2025

Accepted: 05-Feb-2026

Published: 25-Jun-2026

Diagrammatic representation of suggested air movement through the gastrointestinal tract in *Sūrya-namaskāra*

In a similar way, in *āsana* where the trunk is upright, air can be sucked into the stomach with *Kākī-mudrā*, and where the trunk is inverted, the air moves down the pyloric sphincter into the intestines [Tables 1 and 2].

Table 1: Diagrammatic representation of suggested air movement through the gastrointestinal tract in *Sūrya-namaskāra*

	1. <i>Prāṇāmāsana</i>: Standing still with folded hands, a yogi contemplates on the Sun God and at the same time, does <i>Māṇḍūkī-mudrā</i>. Even while standing, some air is present in the upper part (fundus) of the human stomach. In this diagram, a small amount of gastric acid is shown as black
	2. <i>Hastottānāsana</i>: The back is bent backward, the abdomen is relaxed, the thorax is expanded, and the chin is projected forward and upward, a perfect posture for <i>Kākī-mudrā</i>! A yogi sucks in air and fills his stomach with air. Movement of air is shown here by a small black arrow
	3. <i>Pādahastāsana</i>: Bending forward, the stomach gets inverted, and its lower end is brought up; hence, the air contained in the stomach moves toward the intestines. Typically, a yogi stays in this position for about 30 s. <i>Māṇḍūkī-mudrā</i> prevents the regurgitation of the acid content of the stomach. See how the acid shifts to the upper (fundus) region of the stomach. The pyloric sphincter, which normally remains closed, now opens and allows the air to pass into the intestines. This normally takes about 20–30 s. That is the importance of staying in this posture for at least 20–30 s
	4. <i>Āsvasāṇcalanāsana</i>: As the trunk becomes upright again, a yogi finds the stomach empty as all air has escaped into the intestines. Therefore, it can be filled with air once more. The back is bent backward, abdomen is relaxed, thorax expanded, and chin lifted forward and upward: A perfect posture for <i>Kākī-mudrā</i> once again!

Pilot demonstrations

Pilot demonstrations were performed by the author himself on his own body to explore the plausibility of air ingestion. Auscultation over the epigastric region detected gurgling sounds following *Kākī-mudrā* [Figure 2]. Radiographic imaging (barium meal X-ray) before and after the practice indicated an increase in gastric air volume. These pilot observations are qualitative and intended solely to illustrate the physiological feasibility of the hypothesis, not as controlled experimental proof.

Results

Pilot demonstrations showed a consistent increase in intragastric air after performing *Kākī-mudrā*. X-ray imaging revealed visible fundic air expansion, and there was a feeling of transient fullness and subsequent belching. When the air ingestion technique was synchronized with the postural sequence of *Sūrya-namaskāra*, increased flatus was experienced following the full cycle, suggesting

Table 2: Movement of Air In the GIT in Other Āsanās

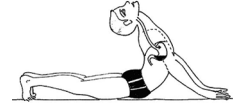
	6. <i>Aṣṭāṅganamaskāra</i>: Air moves to intestines
5. <i>Parvatāsana</i>: Air moves to intestines	
	8. <i>Parvatāsana</i>: Air moves to intestines
7. <i>Bhujāṅgāsana</i>: Air is sucked by <i>Kākī-mudrā</i>	
	10. <i>Pādahastāsana</i>: Air moves to intestines
9. <i>Āsvasāṇcalanāsana</i>: Air is sucked by <i>Kākī-mudrā</i>	
	12. <i>Prāṇāmāsana</i>: <i>Māṇḍūkī-mudrā</i> lubricates the esophagus
11. <i>Hastottānāsana</i>: Air is sucked by <i>Kākī-mudrā</i>	



Figure 1: Movements of a Crow's beak: Inspiration for Kākī-mudrā



Auscultation while performing Kākī-Mudrā

Figure 2: Auscultation while performing Kākī-mudrā



Barium-filled stomach before and after Kākī-mudrā. In the second picture, the stomach shows enlarged air-bubble

Figure 3: Barium filled stomach before and after Kākī-mudrā

air progression into the intestines. Barium X-ray after 12 cycles showed a visible air distension of various segments of intestines. These findings, while preliminary, support the plausibility of *Vāta-sāra* as an embedded mechanism within the sequence [Figure 3].

Discussion

This conceptual exploration proposes that *Sūrya-namaskāra* encodes an ancient understanding of internal air movement, aligning with descriptions of *Vāta-sāra-dhautī*.

Hormonal implications

Air-mediated gastric distension may influence gut hormone dynamics through vagal afferent signaling. Mechanical distension of the stomach could suppress ghrelin secretion, while intestinal air may stimulate glucagon-like peptide-1 release.^[3] These effects may have implications in appetite regulation, weight management, and metabolic balance.^[4]

Antimicrobial hypothesis

Air introduction into the GI tract may create a transiently oxygen-rich environment that could inhibit the growth of microaerophilic or anaerobic pathogens such as *Helicobacter pylori*^[5] and *Entamoeba histolytica*. This possibility warrants microbiological investigation to evaluate whether repeated air ingestion has measurable antimicrobial effects.

Integrative perspective

This reinterpretation bridges ancient yogic knowledge and modern GI physiology, emphasizing internal cleansing (*śodhana*) and mind-body integration. If validated, such practices could inform complementary therapeutic strategies for metabolic and digestive disorders. However, controlled biochemical and microbiome studies are essential before any clinical claims can be substantiated.^[6]

Conclusion

This hypothesis paper proposes that *Sūrya-namaskāra* may embody an intentional design for internal air regulation through *Vāta-sāra* and *Kākī-mudrā*. The plausible hormonal and antimicrobial effects discussed here invite empirical exploration through interdisciplinary research. The concept encourages the scientific community to reexamine yogic techniques as potential models of physiological regulation.

Acknowledgment(s)

1. Dr. (Miss) Sharon Prabhakar for drawing the line sketches of *Sūrya-namaskāra*
2. The author has taken assistance from artificial intelligence (ChatGPT) for language structuring.

Financial support and sponsorship

The X-ray studies were self-funded.

Conflicts of interest

There are no conflicts of interest.

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