

Stress Management: Ayurvedic Review of Selected Pranayama

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Abstract—Stress is widely acknowledged as a complex, multidimensional psycho-physiological condition that arises from prolonged cognitive, emotional, and environmental challenges. It is associated with maladaptive physiological responses, including dysregulation of the autonomic nervous system, hyperactivity of the hypothalamic–pituitary–adrenal (HPA) axis, and alterations in neuroendocrine function, collectively impacting both somatic and psychological well-being. In Ayurvedic thought, stress is understood as a disturbance of Manas (mind), Prana (vital life force), and the Tridosha, particularly Vata and Pitta, often accompanied by imbalances in Rajas and Tamas Guna. Such disruptions in psycho-physiological equilibrium may give rise to various psychosomatic manifestations, including anxiety, insomnia, irritability, and mood disturbances.

Pranayama, the deliberate regulation of breath, forms a core aspect of Ayurvedic and Yogic therapeutic practices. Classical texts emphasize its role in harmonizing Prana, purifying the Nadis (subtle energy channels), and restoring the balance of Dosha and Guna. By modulating autonomic function and promoting parasympathetic activity, Pranayama produces notable psychotropic and somatotropic effects, contributing to emotional stability, enhanced cognitive performance, and overall physiological resilience.

This review explores the therapeutic efficacy of selected Pranayama techniques Anulom Vilom, Bhramari, Bhastrika, Kapalbhathi, Ujjayi, and Sheetal with a focus on their Ayurvedic mechanisms, Dosha-Guna interactions, effects on Pranavaha Srotas, and clinical applicability in stress management. By integrating insights from classical Ayurvedic literature with contemporary scientific findings, the article seeks to provide a comprehensive perspective on Pranayama as an effective non-pharmacological intervention for stress reduction.

Index Terms—Stress, Pranayama, Ayurveda, Manas, Tridosha, Pranavaha Srotas, Dosha-Guna

I. INTRODUCTION

In today's fast-paced world, marked by rapid urbanization, intense academic and professional pressures, and pervasive dependence on digital technology, stress has emerged as a major contributor to a wide array of psychosomatic and lifestyle-related disorders. Chronic exposure to stressors disrupts physiological and psychological homeostasis, impairing cognitive function, emotional regulation, and overall physical health. Long-term stress has been strongly linked with conditions such as anxiety, depression, insomnia, hypertension, cardiovascular disorders, and metabolic imbalances, highlighting its complex and multifactorial impact on human well-being.

From an Ayurvedic standpoint, health (Swasthya) is conceptualized as a state of dynamic balance among the Doshas (Vata, Pitta, Kapha), Dhatus (body tissues), Malas (waste products), and Manas (mind). Persistent disturbances in mental equilibrium, particularly those affecting Manas, are classified as Manasika Vyadhi, which can manifest as emotional instability, cognitive dysfunction, or psychosomatic illness. Ayurveda underscores the intrinsic connection between mental and physical health, emphasizing the central role of Prana (vital life force) in sustaining psychophysiological harmony.

Pranayama, the deliberate practice of controlled breathing, is extensively described in classical Ayurvedic and Yogic literature as a therapeutic intervention capable of regulating Prana, balancing Doshas, stabilizing the mind, and enhancing Sattva

Guna. Through its influence on autonomic nervous system modulation, neuroendocrine regulation, and restoration of psychophysiological equilibrium, Pranayama offers a non-pharmacological strategy to mitigate the harmful effects of chronic stress. Its regular practice has also been associated with enhanced cognitive function, improved emotional resilience, and greater overall vitality, demonstrating its efficacy as both a preventive and therapeutic measure.

Given these multifaceted benefits, the incorporation of Pranayama into daily routines and clinical protocols is increasingly recognized as a potent approach for stress management, mental stabilization, and holistic health promotion, effectively bridging classical Ayurvedic principles with modern scientific insights.

II. AYURVEDIC CONCEPT OF STRESS

Stress does not find a direct equivalent term in classical Ayurvedic texts; however, it can be correlated with conditions such as Chittodvega, Udvega, Vishada, and Bhayaja Vikara. The etiological factors include:

- Prajnaparadha (intellectual blasphemy)
- Asatmya Indriyatha Samyoga (improper sensory engagement)
- Kala Parinama (time and seasonal factors)

Pathogenesis (Samprapti) involves vitiation of Vata and Pitta Dosha, disturbance of Rajas and Tamas Guna, and dysfunction of Manovaha and Pranavaha Srotas. This leads to impaired mental adaptability and heightened stress response.

Role of Pranayama in Stress Management

Pranayama is defined as the conscious regulation of inhalation (Puraka), exhalation (Rechaka), and retention (Kumbhaka). From an Ayurvedic perspective, Pranayama:

- Regulates the flow of Prana throughout the body
- Cleanses Nadis and Srotas
- Enhances parasympathetic activity
- Stabilizes neuro-endocrine responses

These effects collectively contribute to stress reduction, emotional regulation, and improved mental clarity.

III. DETAILED REVIEW OF SELECTED PRANAYAMA

Table : Ayurvedic Evaluation of Selected Pranayama in Stress Management

Pranayama	Ayurvedic Properties	Dosha Effect	Guna Effect	Srotas Involved	Role in Stress Management
Anulom Vilom	Nadi Shodhana, Prana Samyama	Vata-Pitta Shamaka	Sattva Vriddhi	Pranavaha, Manovaha	Reduces anxiety, promotes emotional stability, improves sleep
Bhramari	Manas Shamana, Nada Chikitsa	Vata-Pitta Shamaka	Sattva Vriddhi	Manovaha	Alleviates anger, fear, and mental agitation
Bhastrika	Agni Deepana, Kapha Hara	Kapha Shamaka	Rajas-Tamas Kshaya	Pranavaha	Relieves mental fatigue, enhances alertness and vitality
Kapalbhati	Ama Pachana, Shiro Shodhana	Kapha-Vata Shamaka	Rajas Kshaya	Annavaaha, Pranavaha	Improves cognitive clarity, useful in depressive states
Ujjayi	Prana Niyamana, Vata Shamana	Vata Shamaka	Sattva Vriddhi	Pranavaha	Induces calmness, reduces restlessness and anxiety
Sheetali	Pitta Shamana, Shita Guna	Pitta Shamaka	Rajas Kshaya	Pranavaha, Raktavaha	Reduces irritability, emotional heat, and tension headaches

Pranayama (Breathing Techniques)

1 Anulom-Vilom (Nadi Shodhana)

कुशासने मृगाजिने व्याघ्राजिने च कम्बले ।

स्थूलासने समासीनः प्राङ्ङ्गमुखो वायुदङ्कुखः ।

नाडीशुद्धिं समासाद्य प्राणायामं समभ्यसेत् ॥32 ॥ Ghe.Sam.Ch.5/32

Nadi Shodhana (Alternate Nostril Breathing) is widely recognized for its soothing effect on mental activity

and its capacity to restore balance in the autonomic nervous system. By calming Vata dosha, which is commonly linked to anxiety and mental agitation, this practice contributes to emotional regulation and stress reduction. It facilitates a harmonious interaction between the sympathetic and parasympathetic branches of the nervous system, thereby mitigating

stress, improving cognitive clarity, and promoting overall emotional stability.

2 Bhramari Pranayama

वेगाद् घोषं पूरकं भृङ्गनादम् ।

भृङ्गीनादं रेचकं मन्दमन्दम् ।

योगीन्द्राणामेवमभ्यासयोगात्

चित्ते जाता काचिदानन्दलीला ॥ 68 ॥

Bhramari Pranayama calms the mind, reduces stress and anxiety, and balances the nervous system. It improves concentration, sleep, and emotional stability. The humming vibration stimulates the vagus nerve, lowers blood pressure, and prepares the mind for meditation, leading to inner peace and bliss.

3 Bhastrika Pranayama

भस्त्रिका लोहकाराणां यथाक्रमेण सम्भ्रमेत् ।

तथा वायुं च नासाभ्यामुभाभ्यां चालयेच्छनैः ॥ 76 ॥

एवं विंशतिवारं च श्वा कुर्याच्च कुम्भकम् ।

तदन्ते चालयेद्वायुं पूर्वोक्तं च यथाविधि ॥ 77 ॥

त्रिवारं साधयेदेतं भस्त्रिकाकुम्भकं सुधीः ।

न च रोगो न च क्लेश आरोग्यं च दिने दिने ॥ 78 ॥

Ghe.Sam.Ch.5/76-78

Bhastrika Pranayama increases lung capacity and oxygen supply, purifies the respiratory system, and boosts energy levels. It stimulates digestion and metabolism, removes lethargy, and enhances circulation. By activating the nervous system, it improves alertness, strengthens immunity, and prepares the body and mind for higher yogic practices.

4 Kapalabhati Pranayama

भस्त्रावल्लोहकारस्य रेचपूरी ससंभ्रमौ ।

कपालभातिर्विख्याता कफदोषविशोषणी ॥ 36 ॥

Kapalabhati Pranayama involves forceful exhalations and passive inhalations, which help balance Vata and Kapha doshas, reduce mental restlessness, and improve alertness. It modulates the autonomic nervous system, enhances cerebral oxygenation, and may lower stress hormone levels, thereby alleviating anxiety and emotional tension. Regular practice promotes mental clarity, emotional stability, and overall resilience, making it an effective technique for stress management.

5 Ujjayi Pranayama

मुखं संयम्य नाडीभ्यामकृष्य पवनं शनैः ।

यथा लगति कण्ठात्तु हृदयावधि सस्वनम् ॥ 51 ॥

पूर्ववत् कुम्भयेत् प्राणं रेचयेदिड्या ततः ।

श्लेषदोषहरं कण्ठे देहानलविवर्धनम् ॥ 52 ॥ Hathyoga Prad. 2/51-52 pg n. 107

Ujjayi Pranayama calms the mind, regulates the breath, and improves concentration. It enhances lung efficiency, strengthens the respiratory system, and balances the nervous system. The gentle throat sound soothes the mind, reduces stress, improves oxygenation, and prepares the body and mind for meditation.

6 Sheetali Pranayama

जिह्वया वायुमाकृष्य चोदरे पूरयेच्छनैः ।

क्षणं च कुम्भकं कृत्वा नासाभ्यां रेचयेत्पुनः ॥ 74 ॥

सर्वदा साधयेद्योगी शीतलीकुम्भकं शुभम् ।

अजीर्णं कफपित्तं च नैव तस्य प्रजायते ॥ 75 ॥ ghe, sam. Page no. 381

Sheetali Pranayama cools the body and mind, reduces heat, thirst, and fatigue, and calms emotions. It helps control anger, stress, and anxiety, supports digestion, and is beneficial in hot climates and heat-related disorders. It promotes relaxation and mental clarity.

IV. DISCUSSION

The expanded analysis suggests that Pranayama acts as a bridge between mind and body, exerting multidimensional effects on stress pathology. While practices such as Anulom Vilom and Bhramari directly influence mental calmness and emotional regulation, Bhastrika and Kapalabhati restore psycho-physical vitality. Ujjayi and Sheetal Pranayama are particularly beneficial in stress conditions associated with autonomic instability and excessive heat or irritability. The integrative application of these practices ensures holistic management of stress from an Ayurvedic standpoint.

V. CONCLUSION

Pranayama constitutes a vital, non-pharmacological therapeutic approach in the management of stress. The selected Pranayama practices exert profound effects on Manas, Prana, Dosha, and Guna, thereby restoring psycho-physiological equilibrium. Regular, supervised practice can significantly reduce stress, enhance mental resilience, and promote holistic health. Hence, Pranayama should be incorporated as an essential component of preventive and curative strategies in stress-related disorders.

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