

AYURVEDIC CONCEPT OF KRIYA KALA AND ITS CORRELATION WITH HOMEOSTASIS AND DISEASE PROGRESSION: A NARRATIVE REVIEW

¹Dr. Gayatree Vishwanath Madhwai, ^{2*}Dr. Sheetal Roman

¹BAMS, MD Scholar, Department of Kriya Sharir, Dr. D.Y. Patil College of Ayurved and Research Centre, Pimpri, Pune.

²BAMS, MD. PhD. Kriya Sharir, HOD and Professor, Department of Kriya Sharir, Dr. D. Y. Patil College of Ayurved and Research Centre, Pimpri, Pune.

Article Received on 15 July 2026,
Article Revised on 05 August 2026,
Article Published on 16 August 2026,

<https://doi.org/10.5281/zenodo.21990142>

*Corresponding Author

Dr. Sheetal Roman

BAMS, MD. PhD. Kriya Sharir, HOD
and Professor, Department of Kriya
Sharir, Dr. D. Y. Patil College of
Ayurved and Research Centre, Pimpri,
Pune.



How to cite this Article: ¹Dr. Gayatree Vishwanath Madhwai, ^{2*}Dr. Sheetal Roman. (2026). Ayurvedic Concept of Kriya Kala And Its Correlation With Homeostasis And Disease Progression: A Narrative Review. World Journal of Pharmaceutical Research, 15(16), 1676-1686. This work is licensed under Creative Commons Attribution 4.0 International license.

ABSTRACT

Introduction: Ayurveda describes health as a state of physiological equilibrium and disease as a progressive disturbance of this equilibrium. The concept of *Kriya Kala*, particularly the six stages described by Acharya Sushruta, provides a sequential framework for understanding the progression of *Dosha* imbalance from an initial stage to clinically manifested disease and subsequent complications. Modern physiology describes homeostasis as the maintenance of a relatively stable internal environment through coordinated regulatory mechanisms. The present review explores the possible conceptual relationship between *Kriya Kala*, physiological homeostasis and the progressive development of disease. **Materials and Methods:** A narrative review was conducted using classical Ayurvedic literature, including Charaka Samhita, Sushruta Samhita and Ashtanga Hridaya, along with contemporary literature related to homeostasis,

pathophysiology, disease progression, early diagnosis and preventive medicine. Relevant literature was identified through databases including PubMed, Google Scholar and Ayurvedic scholarly sources. Classical and contemporary concepts were critically analysed and compared to identify possible areas of conceptual convergence. **Results and Discussion:** *Kriya Kala* describes six sequential stages: *Sanchaya*, *Prakopa*, *Prasara*, *Sthana Sanshraya*,

Vyakti and *Bheda*. The first stages represent progressive *Dosha* accumulation, aggravation and dissemination, while later stages involve localization, clinical manifestation and complications. From a modern physiological perspective, these stages may be conceptually compared with progressive alterations occurring from physiological adaptation and early dysregulation to tissue-level pathology, clinically apparent disease and complications. Homeostasis maintains physiological variables within functional limits through feedback and regulatory mechanisms. Persistent disturbances may result in compensatory responses and eventually pathological changes. The concept of *Kriya Kala* therefore provides a potentially useful Ayurvedic model for understanding disease as a dynamic process rather than a sudden event. However, direct equivalence between Ayurvedic stages and modern pathological stages cannot currently be established. **Conclusion:** *Kriya Kala* provides a valuable conceptual framework for understanding the temporal progression of disease and emphasizes early recognition and intervention. Its possible relationship with homeostasis and modern concepts of disease progression may provide an interdisciplinary research framework for *Kriya Sharir*. Future studies integrating Ayurvedic assessment with measurable physiological, biochemical and molecular markers may help evaluate the scientific applicability of this model.

KEYWORDS: *Shat Kriya Kala*, homeostasis, disease progression, *Dosha*, pathophysiology, Ayurveda, physiology, preventive medicine.

INTRODUCTION

Health is a dynamic state maintained through continuous interaction between the individual and the external environment. The human body constantly encounters changes in temperature, nutrition, physical activity, psychological stress, sleep, infection and other environmental factors. Despite these fluctuations, physiological systems work continuously to maintain the internal environment within a range compatible with normal cellular and organ function. This regulatory phenomenon is broadly described in modern physiology as homeostasis.^[1]

Homeostasis involves coordinated activity of the nervous, endocrine, cardiovascular, respiratory, renal and metabolic systems. Negative feedback mechanisms play a major role in maintaining variables such as body temperature, blood glucose, blood pressure, pH, osmolarity and electrolyte concentrations within appropriate physiological ranges.^[2] When compensatory mechanisms are sufficient, the disturbance is corrected and physiological

equilibrium is restored. When disturbances are persistent or regulatory capacity becomes inadequate, progressive physiological dysfunction may occur.^[3]

Ayurveda also presents health as a state of equilibrium. The classical definition of health describes the balanced state of *Dosha*, *Agni*, *Dhatu* and *Mala*, along with a healthy state of the sensory faculties, mind and self. Thus, health in Ayurveda is not merely absence of disease but an integrated state of physiological and psychological equilibrium.

The development of disease in Ayurveda is not generally regarded as an instantaneous event. Rather, disease develops through a sequence of alterations in *Dosha*, *Dhatu* and *Srotas*. The concept of *Kriya Kala* provides an important temporal framework for understanding this process.

The term *Kriya Kala* can broadly be understood as the appropriate time or stage for action.^[4] *Acharya Sushruta* describes six stages of disease progression known as *Shat Kriya Kala*:

1. *Sanchaya* – accumulation
2. *Prakopa* – aggravation
3. *Prasara* – dissemination or spread
4. *Sthana Samshraya* – localization
5. *Vyakti* – manifestation
6. *Bheda* – differentiation/complication

These stages represent progressive changes beginning with accumulation of *Dosha* and culminating in clinically manifested disease and its complications. Recent literature has highlighted the preventive and diagnostic importance of this sequential model, particularly its emphasis on intervention before complete disease manifestation.

The first three stages can be interpreted as relatively early phases of *Dosha* disturbance, while *Sthana Samshraya* represents localization and *Vyakti* corresponds to clinically recognizable disease. *Bheda* represents further differentiation, chronicity or complications.^[5]

Modern medicine recognizes that disease frequently develops through a continuum rather than appearing abruptly. There may be a period of altered physiology before structural damage or overt clinical symptoms become apparent. Examples include insulin resistance preceding type 2 diabetes, endothelial dysfunction preceding cardiovascular disease, and chronic low-grade inflammation preceding several metabolic disorders.^[6]

Therefore, the present review attempts to examine *Kriya Kala* from a physiological perspective and explore its possible conceptual correlation with homeostasis, physiological adaptation, early dysregulation and disease progression.

MATERIALS AND METHODS

The present study was conducted as a narrative review integrating classical Ayurvedic concepts with contemporary physiological and pathological concepts.

Classical Ayurvedic literature

Primary Ayurvedic sources were reviewed, particularly Charaka Samhita, Sushruta Samhita and Ashtanga Hridaya.

Modern literature

Contemporary literature concerning the following concepts was reviewed: homeostasis, physiological regulation, feedback mechanisms, adaptation, pathophysiology, subclinical disease, disease progression, early diagnosis, preventive medicine.

RESULTS AND DISCUSSION

1. Homeostasis as the physiological basis of health

Homeostasis refers to the ability of an organism to maintain its internal environment within a relatively stable range despite continuous external and internal disturbances.

Important homeostatically regulated variables include body temperature, blood glucose, blood pressure, arterial pH, oxygen and carbon dioxide levels, electrolyte concentrations.

Homeostasis is achieved through integrated regulatory mechanisms involving sensors, control centres and effectors.^[3]

A simplified physiological model can be represented as

Disturbance → Sensor → Integrating/control system → Effector → Correction → Restoration of physiological range

For example

Increase in blood glucose → detection → pancreatic response → insulin secretion → increased glucose uptake/storage → reduction in blood glucose Thus, health is not a static

condition. It represents a dynamic equilibrium continuously maintained through regulatory processes.

2. Ayurvedic concept of physiological equilibrium

Ayurveda describes health through equilibrium of fundamental physiological components. The classical definition of health includes balanced *Dosha*, *Agni*, *Dhatu* and *Mala*, along with normal functioning of the sensory faculties, mind and *Atma*.^[4]

The concept of *Samya* can therefore be considered central to Ayurvedic physiology. When *Dosha*, *Agni*, *Dhatu* and *Mala* remain within their appropriate functional state, physiological equilibrium is maintained. When their normal functioning is disturbed, the state of equilibrium is altered.^[4]

This provides a conceptual framework that may be compared with the modern physiological concept of maintaining internal stability.

However, *Samya* and homeostasis should not be treated as exact synonyms. Homeostasis is a modern physiological concept based on measurable biological variables, whereas Ayurvedic equilibrium encompasses functional, systemic and psychological dimensions.

3. *Kriya Kala* as a temporal model of disease progression

Kriya Kala is particularly important because it introduces the dimension of time into disease development.

Rather than viewing disease as a sudden event, *Kriya Kala* describes a sequence through which *Dosha* disturbance progresses.

The six stages are

1. *Sanchaya* (Accumulation)
2. *Prakopa* (Aggravation)
3. *Prasara* (Spread/dissemination)
4. *Sthana Samshraya* (Localization)
5. *Vyakti* (Clinical manifestation)
6. *Bheda* (Differentiation/complication)

Recent reviews describe these six stages as a progressive sequence from early *Dosha* imbalance to disease manifestation and complications.^[7] The major physiological significance of this model is that intervention is possible before complete disease manifestation.

4. *Sanchaya* and early physiological deviation

Sanchaya represent the initial accumulation of a *Dosha* at its principal site. This stage can be conceptually understood as the beginning of deviation from equilibrium. The disturbance may not necessarily produce a clearly recognizable disease.

In modern physiology, many pathological conditions similarly begin with subtle changes before clinically apparent disease develops. Examples include:

- mild insulin resistance before diabetes
- endothelial dysfunction before cardiovascular disease
- early inflammatory changes before tissue injury
- altered lipid metabolism before atherosclerotic disease
- subtle autonomic imbalance during chronic stress

These examples demonstrate that physiological systems can remain apparently functional despite underlying changes.^[8]

Thus, *Sanchaya* may be conceptually compared with an early phase of physiological deviation, although no direct one-to-one biomedical equivalent can presently be established.

5. *Prakopa* and progressive dysregulation

In *Prakopa*, the accumulated *Dosha* becomes aggravated.

From a physiological perspective, persistent exposure to causative factors may increase the magnitude of a biological disturbance. Initially compensatory mechanisms may prevent overt disease, but continuing exposure may gradually increase regulatory burden.^[9]

For example

Excess caloric intake → metabolic adaptation → insulin resistance → compensatory hyperinsulinemia → progressive metabolic dysfunction.

Similarly

Repeated stress → sympathetic/HPA activation → adaptation → persistent neuroendocrine activation → physiological dysregulation

The comparison suggests that *Prakopa* may be conceptually interpreted as a stage where an initial deviation becomes more pronounced.

6. *Prasara* and systemic dissemination

Prasara refers to the movement or spread of aggravated *Dosha* from its original site into other parts of the body.

In modern pathophysiology, several disorders involve transition from a localized disturbance to systemic involvement.

Examples include

- systemic inflammatory responses
- dissemination of metabolic abnormalities
- circulating inflammatory mediators
- neuroendocrine effects of chronic stress
- systemic effects of altered immune signalling

The modern body is understood as an interconnected network rather than a collection of isolated organs. Signals originating from one organ can influence distant tissues through blood-borne mediators, neural pathways and endocrine mechanisms.^[7,10] Thus, *Prasara* can be considered a conceptual model of progression from localized physiological disturbance toward wider systemic involvement.

It should not, however, be equated with metastasis or simple physical movement of a pathological substance.

7. *Sthana Sanshraya* and tissue susceptibility

Sthana Samshraya represents localization of the vitiated *Dosha* at a susceptible site and is associated with the development of the basis for disease manifestation.

The concept of *Khavaigunya*, or susceptibility of a particular tissue or site, becomes important here.

Modern medicine similarly recognizes that disease expression depends not only on the presence of a systemic disturbance but also on the susceptibility of particular tissues.^[12]

Examples include

- pancreatic β -cell vulnerability in diabetes
- vascular susceptibility in atherosclerosis
- neuronal vulnerability in neurodegenerative disease
- genetic predisposition to particular diseases
- tissue-specific effects of inflammatory mediators

Therefore

Systemic disturbance + tissue susceptibility $\rightarrow$ localized pathological process This provides one of the most interesting areas for interdisciplinary comparison between *Sthana Sanshraya* and modern disease pathogenesis.

8. *Vyakti* and clinical manifestation

Vyakti represents the stage at which the disease becomes clinically manifest with recognizable signs and symptoms.

This stage has an obvious conceptual parallel with modern clinical medicine, where a pathological process becomes sufficiently advanced to produce measurable clinical manifestations.

For example:

Metabolic dysfunction $\rightarrow$ progressive insulin resistance $\rightarrow$ β -cell dysfunction $\rightarrow$ hyperglycaemia $\rightarrow$ clinically detectable diabetes The clinical stage is important because diagnosis becomes easier; however, the pathological process may have been developing much earlier.^[13] *Kriya Kala* therefore emphasizes the importance of identifying the disease process before *Vyakti*, when intervention may potentially prevent further progression.

9. *Bheda* and complications

The final stage, *Bheda*, represents further differentiation of the disease and may include chronicity, complications and more advanced pathological changes.¹² In modern medicine, prolonged disease can result in:

- structural tissue damage
- organ dysfunction

- complications
- secondary pathological processes
- irreversible changes
- reduced physiological reserve

For example, persistent hyperglycaemia may eventually lead to microvascular and macrovascular complications. Thus, *Bheda* can be conceptually considered a stage where disease becomes more established and complicated.^[14]

10. Possible correlation between *Kriya Kala* and modern disease progression.

A broad conceptual comparison can be represented as follows:

<i>Kriya Kala</i>	Ayurvedic interpretation	Possible modern physiological/pathological parallel
<i>Sanchaya</i>	Initial <i>Dosha</i> accumulation	Early deviation from physiological equilibrium
<i>Prakopa</i>	<i>Dosha</i> aggravation	Increasing dysregulation / compensatory response
<i>Prasara</i>	Spread of aggravated <i>Dosha</i>	Wider systemic involvement
<i>Sthana Sanshraya</i>	Localization at susceptible site	Tissue susceptibility/local pathological process
<i>Vyakti</i>	Clinical manifestation	Overt clinical disease
<i>Bheda</i>	Further differentiation/complication	Chronic disease, structural damage or complications

This table represents conceptual comparison and not equivalence.

Recent literature similarly proposes that early *Kriya Kala* stages may provide opportunities for prevention before full clinical manifestation, while later stages correspond to progressive pathology and complications.^[16,17]

11. *Kriya Kala* and the concept of physiological reserve

An important bridge between *Kriya Kala* and modern physiology may be the concept of physiological reserve.

- The body can compensate for disturbances while maintaining apparently normal function. For example:
- pancreatic β -cells can compensate for increasing insulin resistance
- cardiovascular mechanisms can compensate for changes in vascular resistance
- renal function can compensate for loss of nephron function for a period of time
- autonomic mechanisms can compensate for acute physiological stress
- When compensatory mechanisms are sufficient, homeostasis is preserved.

When the disturbance exceeds adaptive capacity:

Stress → compensation → increasing physiological burden → loss of compensation → overt Dysfunction This model provides a useful physiological interpretation of the progression from subtle imbalance to overt disease.^[15,16]

CONCLUSION

Kriya Kala represents one of Ayurveda's important temporal models of disease progression. The six stages: *Sanchaya*, *Prakopa*, *Prasara*, *Sthana Samshraya*, *Vyakti* and *Bheda* describe a progressive movement from initial *Dosha* disturbance to localization, clinical manifestation and complications. From the ayurvedic perspective the concept can be meaningfully discussed alongside modern physiology because both recognize that health is a dynamic process and that pathological disease may emerge after progressive physiological alterations. Homeostasis maintains internal stability through continuous regulatory mechanisms, while persistent disturbances may produce adaptation, compensatory responses, progressive dysregulation and eventual disease.

The possible relationship between *Kriya Kala* and modern physiology is therefore best understood as a conceptual bridge rather than a direct equivalence. *Sanchaya* and *Prakopa* may be discussed in relation to early physiological deviations and increasing dysregulation; *Prasara* with wider systemic involvement; *Sthana Samshraya* with tissue susceptibility and localization; *Vyakti* with overt clinical manifestation; and *Bheda* with chronicity or complications.

The most important contribution of *Kriya Kala* may lie in its emphasis on time, early recognition and therapeutic opportunity. This aligns conceptually with modern preventive medicine, which increasingly focuses on detecting physiological dysfunction before irreversible pathology develops. Future longitudinal research combining Ayurvedic assessment with objective physiological, biochemical, molecular and imaging biomarkers may determine whether *Kriya Kala* can serve as a scientifically testable model of disease progression and early intervention.

REFERENCES

1. Hall JE, Hall ME. *Guyton and Hall Textbook of Medical Physiology*. 14th ed. Philadelphia: Elsevier, 2021.

2. Barrett KE, Barman SM, Brooks HL, Yuan JXJ. *Ganong's Review of Medical Physiology*. 26th ed. New York: McGraw-Hill, 2019.
3. Cannon WB. Organization for physiological homeostasis. *Physiol Rev.*, 1929; 9(3): 399-431.
4. Sharma RK, Dash B. *Caraka Samhita of Agnivesha*. Varanasi: Chowkhamba Sanskrit Series Office.
5. Sharma PV, editor. *Sushruta Samhita of Sushruta with English Translation*. Varanasi: Chaukhambha Vishvabharati.
6. Sterling P, Eyer J. Allostasis: a new paradigm to explain arousal pathology. In: Fisher S, Reason J, editors. *Handbook of Life Stress, Cognition and Health*. New York: Wiley, 1988; 629-649.
7. Srikantha Murthy KR. *Ashtanga Hridaya of Vagbhata*. Varanasi: Krishnadas Academy.
8. Tripathi P, Jha MK. Understanding Kriya Kala: stages of disease development in Ayurveda – a review. *J ReAttach Ther Dev Divers.*, 2022; 5(1).
9. McEwen BS, Stellar E. Stress and the individual: mechanisms leading to disease. *Arch Intern Med.*, 1993; 153(18): 2093-2101.
10. Selye H. The general adaptation syndrome and the diseases of adaptation. *J Clin Endocrinol Metab.*, 1946; 6: 117-230.
11. McEwen BS. Protective and damaging effects of stress mediators. *N Engl J Med.*, 1998; 338(3): 171-179.
12. Harivedi R. Kriyakala and its importance in prevention of disease. *Int J Ayurveda Herbal Res.*, 2024.
13. Bihari K, Pandey AK. Concept of Kriyakala in the light of prevention & management of disease. *J Ayurveda Holist Med.*, 2023.
14. Bishnoi N, et al. Kriyakala in Ayurveda: understanding disease progression for precise treatments. *J Ayu Int Med Sci.*, 2024; 9(1): 105.
15. A critical review on Kriya Kala described in Ayurveda – phases of disease manifestation. *J Ayurveda Integr Med Sci.*, 2026.
16. A critical review on the concept of Kriya Kala: stages of disease manifestation in Ayurveda. *International Journal of AYUSH.*, 2025; 14(9).
17. Comprehensive review on Sat Kriya Kala: the six stages of disease progression in Ayurveda and their clinical relevance. *Ayurved Journal*, 2025; 2(2).