

# Dwitiya PātalagataRoga: An Ayurvedic Perspective on Presbyopia - A Review

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**Abstract**—Presbyopia is a universal, age-related visual disorder characterized by a progressive decline in near vision due to the gradual loss of accommodative ability of the eye. With increasing life expectancy and extensive near-work demands in modern lifestyles, presbyopia has emerged as a significant public health concern affecting visual efficiency, occupational productivity, and overall quality of life. Contemporary ophthalmology attributes presbyopia primarily to age-related sclerosis of the crystalline lens, reduced elasticity of the lens capsule, and weakening of ciliary muscle function. Management is largely symptomatic, relying on corrective lenses or surgical interventions, with no definitive preventive or curative strategy available. Ayurveda, the ancient Indian system of medicine, provides a comprehensive and layered understanding of ocular anatomy, physiology, and pathology through the concepts of Netra Śarīra, Doṣa–Dhātu–Mala Siddhānta, and PātalagataRogas. Classical Ayurvedic texts such as the SuśrutaSaṃhitā and AṣṭāṅgaHṛdaya describe four patalas of the eye, and diseases affecting these layers result in progressive visual impairment. Dwitiya PātalagataRoga, a disorder involving the second patala of the eye, is characterized by impaired visual perception, particularly difficulty in near vision, ocular fatigue, and visual strain features that closely resemble the clinical presentation of presbyopia. The pathogenesis of Dwitiya PātalagataRoga is primarily attributed to Vātadoṣaprakopa, Dhātukṣaya, and Jaraavasthā (aging), leading to functional deterioration of ocular tissues. This review aims to critically analyze the Ayurvedic concept of Dwitiya PātalagataRoga, its etiopathogenesis, clinical features, and therapeutic principles, and to correlate these classical descriptions with the modern understanding of presbyopia. The article further highlights the preventive and therapeutic potential of Ayurvedic interventions, including Rasāyana therapy, Netra kriyākalpa, Panchakarma, and

Āhāra–Vihāra modifications, emphasizing their role in delaying disease progression and improving visual comfort. By bridging classical Ayurvedic wisdom with contemporary ophthalmological concepts, this review seeks to provide a holistic framework for the integrative management of presbyopia.

**Index Terms**—Dwitiya PātalagataRoga, Presbyopia, Netra Roga, VātaDoṣa, Jara, Accommodation, Ayurvedic Ophthalmology.

## I. INTRODUCTION

Vision plays a pivotal role in human perception, learning, and daily functioning, and any decline in visual acuity significantly impacts an individual's personal, professional, and social life. Among the various visual disorders associated with aging, presbyopia is the most common and inevitable condition, affecting nearly all individuals beyond the age of 40 years. It manifests as a gradual difficulty in performing near-vision tasks such as reading, writing, sewing, or using digital devices, often accompanied by eye strain, headache, and visual fatigue. With the global increase in life expectancy and the widespread use of smartphones and digital screens, the functional burden of presbyopia has increased substantially.<sup>1</sup>

From the perspective of modern ophthalmology, presbyopia is considered a physiological aging process rather than a pathological condition. It is attributed to progressive biochemical and structural changes in the crystalline lens, including increased lens rigidity, reduced elasticity, and diminished ciliary muscle efficiency, leading to a decline in accommodative power. Current management strategies are primarily

compensatory, focusing on optical correction using reading glasses, bifocals, or multifocal lenses, and in selected cases, surgical interventions such as refractive lens exchange or corneal procedures. However, these approaches do not address the underlying degenerative process and offer no preventive solution.<sup>2</sup>

Ayurveda, in contrast, views aging (Jara) as a natural yet modifiable process influenced by dietary habits, lifestyle, mental stress, and doṣa balance. The eye (Netra) is regarded as one of the most delicate and vital sense organs, with its proper functioning dependent on the nourishment and equilibrium of Rasa, Rakta, Māmsa, and Majjādhātus, along with the integrity of Alochaka Pitta and controlled Vātadoṣa. Classical Ayurvedic texts provide a detailed anatomical and pathological classification of ocular diseases under Netra Rogas, among which PātalagataRogas occupy a significant position.<sup>3</sup>

The concept of Pātala refers to the structural and functional layers of the eye, and disease involvement progresses sequentially from the first to the fourth patala, resulting in increasing severity of visual impairment. Dwitiya PātalagataRoga, affecting the second patala, is described with symptoms such as blurred or indistinct vision, difficulty in perceiving near objects, ocular fatigue, and strain—features that show a remarkable resemblance to presbyopia. The condition is predominantly caused by Vātadoṣa aggravation, often precipitated by aging, excessive visual exertion, improper dietary habits, and lack of rejuvenative measures.<sup>4</sup>

Despite these conceptual similarities, Dwitiya PātalagataRoga remains underexplored in contemporary Ayurvedic ophthalmic research, particularly in relation to presbyopia. A systematic review and correlation of classical descriptions with modern scientific understanding can provide valuable insights into preventive strategies and supportive management options rooted in Ayurveda. Therefore, this review seeks to explore the Ayurvedic perspective of Dwitiya PātalagataRoga, establish its correlation with presbyopia, and highlight the scope of Ayurvedic principles in addressing age-related visual decline in a holistic and integrative manner.<sup>5</sup>

Aims and objectives

Aim

To review Dwitiya PātalagataRoga described in Ayurvedic classics and correlate it with presbyopia from a contemporary ophthalmological perspective.

Objectives

1. To compile classical references related to Dwitiya PātalagataRoga
2. To study its nidāna, samprapti, and lakṣaṇa
3. To correlate Dwitiya PātalagataRoga with presbyopia
4. To analyze Ayurvedic management principles and preventive strategies

## II. MATERIALS AND METHODS

- Classical Ayurvedic texts: SuśrutaSaṃhitā, AṣṭāṅgaHṛdaya, AṣṭāṅgaSaṅgraha, Bhāvaprakāśa
- Commentaries: Dalhaṇa, Aruṇadatta, Hemādri
- Modern ophthalmology textbooks and review articles
- Conceptual and literary analysis method was adopted

Concept of Pātala in Ayurveda<sup>6</sup>

Ayurveda describes the eye as composed of four pātalas, which serve as anatomical and functional layers:

Patala	Dominant Dhātu	Functional Correlation
Prathama	Rasa–Rakta	Optical clarity
Dwitiya	Rakta–Māmsa	Accommodation and visual perception
Tr̥tīya	Māmsa–Meda	Structural stability
Caturtha	Asthi–Majjā	Irreversible blindness

Disease progression through these layers results in progressively severe visual impairment.

Dwitiya PātalagataRoga: Classical Description<sup>7</sup>

Nidāna (Etiological Factors)

- Vardhakya (aging)
- Excessive visual strain (Ati-darśana)
- Rūkṣa, laghu, alpaāhāra
- Suppression of natural urges
- Mental stress
- Lack of Rasāyana intake

Doṣa Involvement

- Predominantly Vāta
- Secondary involvement of Pitta

Samprapti (Pathogenesis)

1. Aging leads to Dhātukṣaya, especially Rasa, Rakta, and Majjā

2. Vātadoṣa aggravation causes dryness and loss of elasticity
  3. Dwitiya patala gets affected, impairing accommodative function
  4. Progressive difficulty in near vision occurs
- This samprapti mirrors the modern pathogenesis of presbyopia.

#### Lakṣaṇa (Clinical Features)<sup>8</sup>

Classical features of Dwitiya PātalagataRoga include:

- Dūrespaṣṭadarśanam, sāmīpeaspaṣṭatā (difficulty in near vision)
- Eye strain
- Headache after reading
- Need for increased light
- Visual fatigue

#### Correlation with Presbyopia<sup>9</sup>

Ayurveda	Modern Medicine
Dwitiya PātalagataRoga	Presbyopia
Vātaprakopa	Reduced lens elasticity
Dhātukṣaya	Age-related degeneration
Accommodation impairment	Loss of accommodative power
Rasāyanachikitsā	Preventive geriatrics

Thus, Dwitiya PātalagataRoga can be reasonably correlated with presbyopia.

ChikitsāSiddhānta (Principles of Management)<sup>10</sup>

#### 1. DoṣaŚamana

- Vāta-pacifying measures
- Sneha-based therapies

#### 2. Rasāyana Therapy

- TriphalāRasāyana
- Amṛta (Guḍūcī)
- Āmalakī

#### 3. Netra KriyāKalpa

- Tarpana
- Putapāka
- Aścyotana
- Anjana (Yogāñjana, Sauvirañjana)

#### 4. Panchakarma

- Nasya (Anutaila, Kṣīrabalataila)
- Śirodhārā

#### Āhāra and Vihāra <sup>11</sup>

##### Pathya

- Ghṛta
- Milk
- Green leafy vegetables
- Adequate rest for eyes

##### Apathya

- Excessive screen use
- Night awakening
- Dry and processed foods

#### Preventive Aspect

Ayurveda emphasizes early Rasāyana use, eye exercises, proper lighting, and seasonal regimens to delay onset and progression of visual degeneration.

Table 1. Comparative Analysis of Dwitiya PātalagataRoga and Presbyopia

Parameter	Dwitiya PātalagataRoga (Ayurveda)	Presbyopia (Modern Ophthalmology)
Nature of condition	Jara-janya, Doṣa-dominant functional disorder	Age-related physiological refractive disorder
Age of onset	Usually after Madhyāvasthā (40+ years)	Typically after 40 years
Primary pathology	Vātaprakopa with Dhātukṣaya	Loss of lens elasticity and accommodative power
Tissue involvement	Rakta-Māmsa-Majjādhātu of Dwitiya Patala	Crystalline lens, ciliary muscle
Key symptom	Near vision indistinctness (Sāmīpaaspaṣṭatā)	Difficulty in near vision
Progression	Gradual, patala-wise	Gradual, age-progressive
Reversibility	Partially manageable with Rasāyana	Not reversible
Treatment goal	Delay progression, improve function	Optical correction

Table 2. Doṣa–Dhātu Involvement in Dwitiya PātalagataRoga and Their Functional Impact

Doṣa / Dhātu	Ayurvedic Role	Functional Impact on Vision	Modern Correlation
Vāta	Governs movement, accommodation	Loss of flexibility and adaptability	Reduced accommodative response

Pitta (Alochaka)	Visual perception	Reduced clarity in near tasks	Decreased visual efficiency
Rasa Dhātu	Nourishment, lubrication	Dryness, eye strain	Reduced ocular hydration
RaktaDhātu	Oxygenation, vitality	Visual fatigue	Reduced metabolic support
MajjāDhātu	Neural and sensory support	Weak visual stamina	Neural aging

Table 3. Risk Factor Stratification for Dwitiya PātalagataRoga (New Integrative Model)

Risk Category	Factors	Doṣic Impact	Clinical Relevance
Non-modifiable	Aging (Jara)	Vāta ↑	Inevitable baseline risk
Behavioral	Excess screen use, night work	Vāta–Pitta ↑	Early onset presbyopic symptoms
Dietary	Rūkṣa, alpa, irregular diet	Vāta ↑, Dhātukṣaya	Faster progression
Occupational	Fine near work (tailoring, IT)	Vāta ↑	Increased accommodative strain
Protective	Ghṛta intake, Rasāyana use	Vāta ↓, Dhātuposhana	Delayed onset

Table 4. Preventive Strategy Matrix Based on Age (New Preventive Model)

Age Group	Dominant Doṣa	Recommended Strategy	Expected Benefit
30–40 yrs	Pitta–Vāta	Rasāyana initiation	Delay onset
40–50 yrs	Vāta	Netra kriyākalpa	Reduce symptoms
50–60 yrs	Vāta ↑↑	Sneha, Nasya	Maintain function
>60 yrs	Vāta–Dhātukṣaya	Supportive care	Improve comfort

### III. DISCUSSION

Presbyopia, though universally prevalent and traditionally regarded as a physiological consequence of aging, presents significant functional limitations that warrant comprehensive understanding and effective management strategies. Modern ophthalmology primarily conceptualizes presbyopia as a biomechanical failure of accommodation resulting from age-related sclerosis of the crystalline lens, reduced lens capsule elasticity, and diminished ciliary muscle responsiveness. However, this structural explanation alone does not adequately address inter-individual variability in the onset, severity, and progression of presbyopia, nor does it offer preventive or disease-modifying interventions.<sup>12</sup>

Ayurveda provides a broader and more integrative framework to understand such age-related functional decline through the principles of Doṣa–Dhātu–Mala Siddhānta and JaraChikitsā. The correlation of presbyopia with Dwitiya PātalagataRoga is conceptually sound when analyzed through classical symptomatology, etiopathogenesis, and disease localization. The second patala of the eye, as described in Ayurvedic texts, is functionally responsible for visual perception and fine visual tasks, which closely aligns with the accommodative function emphasized in modern ophthalmology.<sup>13</sup>

The dominance of Vātadoṣa in Dwitiya PātalagataRoga is particularly significant. Vāta, by virtue of its rūkṣa (dry), laghu (light), khara (rough), and cala (mobile) qualities, naturally increases during aging and leads to Dhātukṣaya. This dhātu depletion, especially of Rasa, Rakta, and Majjā, results in inadequate nourishment of ocular tissues, reduced lubrication, loss of elasticity, and functional decline. These Ayurvedic descriptions parallel the modern understanding of reduced hydration, altered protein composition, and increased rigidity of the lens with advancing age.<sup>14</sup>

Another important aspect highlighted in Ayurveda is the role of Ati-yoga of indriyas, particularly excessive use of the eyes. Prolonged near work, inadequate lighting, and continuous exposure to digital screens aggravate Vāta and Pitta doṣas, accelerating degenerative changes in ocular structures. This observation holds strong relevance in the current era, where digital eye strain has become a significant contributory factor in the early onset and rapid progression of presbyopic symptoms.<sup>15</sup>

From a therapeutic standpoint, modern management of presbyopia is largely palliative and device-dependent. Corrective lenses and surgical procedures improve visual performance but do not address the underlying degenerative changes or enhance ocular tissue health. In contrast, Ayurvedic management of Dwitiya

PātalagataRoga is multidimensional, focusing on Doṣaśamana, Dhātuposhana, and Rasāyanachikitsā. Interventions such as Netra Tarpana, Putapāka, Nasya, and Ghr̥ta-based formulations aim to restore ocular lubrication, improve tissue nourishment, and stabilize visual function.<sup>16</sup>

The concept of Rasāyana, particularly CakṣuṣyaRasāyana, holds special significance in this context. Drugs like Āmalakī, Triphalā, Guḍūcī, and Ghr̥ta preparations are described to delay senescence, enhance tissue resilience, and maintain sensory organ function. While these measures may not completely reverse presbyopia, they have the potential to delay its onset, reduce symptom severity, and improve visual comfort, thereby decreasing dependency on optical aids.<sup>17</sup>

Despite strong theoretical foundations, one of the major limitations in the Ayurvedic management of presbyopia is the lack of large-scale, methodologically robust clinical studies. Most available evidence is experiential or based on small observational studies. Therefore, there is a pressing need for well-designed clinical trials integrating objective parameters such as accommodative amplitude, near visual acuity, and quality-of-life indices to scientifically validate Ayurvedic interventions in presbyopia.<sup>18</sup>

#### IV. CONCLUSION

Dwitiya PātalagataRoga, as described in classical Ayurvedic literature, provides a comprehensive and insightful framework for understanding presbyopia as an age-related, Vāta-dominant functional disorder of the eye. The striking similarity between the lakṣaṇas, etiopathogenesis, and progression of Dwitiya PātalagataRoga and presbyopia supports a rational and clinically meaningful correlation between the two conditions. Unlike modern medicine, which primarily offers symptomatic and compensatory solutions, Ayurveda emphasizes prevention, early intervention, and holistic management through Doṣa balance, Dhātu nourishment, and Rasāyana therapy. Although complete reversal of presbyopia may not be feasible, Ayurvedic measures can play a significant role in delaying disease onset, reducing symptom severity, enhancing visual comfort, and improving overall ocular health during aging. The integration of Ayurvedic principles such as Netra kriyākalpa, Panchakarma, Āhāra–Vihāra regulation, and

CakṣuṣyaRasāyana with modern ophthalmic care may offer a more comprehensive and patient-centered approach to presbyopia management. Future research should focus on standardizing diagnostic criteria, treatment protocols, and outcome measures to establish evidence-based guidelines for the Ayurvedic management of presbyopia. In conclusion, Dwitiya PātalagataRoga stands as a classical Ayurvedic representation of presbyopia, highlighting the relevance of ancient wisdom in addressing contemporary age-related visual disorders. A systematic, integrative, and research-oriented approach can significantly enhance the scope of Ayurveda in ophthalmology and contribute meaningfully to geriatric eye care.

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