



# An Ayurvedic Review On Refractive Errors In Children With A Focus On Anjana And Tarpana Therapies

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## ABSTRACT:

Refractive errors are one of the most common ocular conditions seen in children worldwide, affecting their academic performance and quality of life. The increasing prevalence of these disorders due to digital exposure, poor dietary habits, and lack of outdoor activities necessitates the exploration of holistic treatment approaches. Ayurveda, with its well-established ocular therapies like Anjana and Tarpana, provides valuable interventions in the management and prevention of visual impairments. This review explores the Ayurvedic understanding of refractive errors through classical texts and examines the role of Anjana and Tarpana in pediatric ocular care. Classical and contemporary literature have been reviewed to highlight therapeutic potentials and suggest integrative approaches for early intervention.

**Keywords:** Refractive errors, Myopia, Hypermetropia, Anjana, Tarpana

## INTRODUCTION:

Refractive errors, including myopia, hypermetropia, and astigmatism, constitute a major cause of visual disability among children. According to the World Health Organization, nearly 19 million children under the age of 15 are visually impaired globally, with refractive errors accounting for a significant proportion [1]. The increasing screen time, reduced outdoor exposure, and poor nutritional habits have been implicated as contributory factors [2]. While spectacles remain the mainstay of treatment, they do not address the underlying causes. Ayurveda, a holistic system of medicine, offers a multi-dimensional approach,

addressing not only the symptoms but also the root causes of eye diseases. This review focuses on the Ayurvedic interpretation of refractive errors and evaluates the therapeutic potential of Anjana and Tarpana in pediatric care.

### AYURVEDIC PERSPECTIVE OF REFRACTIVE ERRORS:

Although refractive errors as such are not directly mentioned in classical Ayurvedic texts, they can be correlated with Timira (initial stage of vision loss) and early stages of Kacha and Linganasha described in Shalakya Tantra <sup>[3]</sup>. Timira involves vitiation of Vata and Pitta doshas leading to disturbance in the function of Drishti (vision) due to dhatu kshaya (tissue depletion), primarily of Rasa, Rakta, and Mamsa dhatus <sup>[4]</sup>. In children, these conditions may arise due to improper diet, excessive eye strain, and lack of ocular hygiene.

### NIDANA (ETIOLOGY) ACCORDING TO AYURVEDA:

The causative factors of ocular disorders include:

- Excessive exposure to heat, light, and dust → **Correlates with outdoor pollution and UV exposure**
- Indulgence in Amla (sour), Lavana (salty), and Ushna (hot) foods → **Junk food, processed salty snacks, and spicy fast food, which contribute to Pitta aggravation**
- Continuous crying and psychological stress in children → **Psychosocial stressors: academic pressure, peer stress, gadget addiction, and lack of emotional outlets**
- Ratri jagarana (night awakening) and Asatmya indriyarthasamyoga (improper use of sense organs) → **Increased screen time, irregular sleep cycles, binge-watching, and use of gadgets in low light**

These daily lifestyle practices lead to Vata and Pitta vitiation, causing strain, dryness, fatigue, and ultimately impacting the ocular tissues, especially the Drishti mandala (visual field) <sup>[5]</sup>.

### ROLE OF ANJANA IN PEDIATRIC EYE CARE:

Anjana is a local ocular application of medicinal paste or collyrium to the inner canthus and conjunctival sac. It is classified into: - Lekhana Anjana (scraping) - Ropana Anjana (healing) - Snehana Anjana (lubricating). In pediatric care, Snehana and Ropana types are preferred. Common formulations include:

- **Triphala Anjana** – useful in eye strain and improving vision
- **Darvyadi Anjana** – contains Daruharidra, beneficial in Pitta-related ocular conditions
- **Yashtimadhu Anjana** – promotes ocular healing

### MODE OF ACTION OF ANJANA:

- **Teekshna and Sukshma Guna** of Anjana dravyas facilitate deeper penetration into ocular tissues, promoting quick therapeutic action <sup>[6]</sup>.

- **Chakshushya and Rasayana properties** of herbs like Triphala, Daruharidra, and Yashtimadhu nourish the ocular tissues and rejuvenate the optic structures <sup>[7]</sup>.
- **Lekhana Anjana** acts by removing accumulated Kapha and Mala, improving clarity of vision <sup>[8]</sup>.
- **Ropana Anjana** accelerates tissue healing by pacifying Pitta and promoting regeneration of injured epithelial cells <sup>[9]</sup>.
- **Snehana Anjana** lubricates and soothes the ocular surface, reducing irritation and dryness, commonly seen in digital eye strain in children <sup>[10], [11]</sup>.

### ROLE OF TARPANA IN REFRACTIVE ERROR MANAGEMENT:

Tarpana is a unique ocular rejuvenation therapy in which medicated ghee is retained over the eyes in a specially created compartment using dough. It provides nourishment and strength to the ocular tissues, especially to Drishti mandala.

Commonly used formulations:

- **Triphala Ghrita** – Rasayana, Chakshushya, balances all three doshas
- **Jeevantyadi Ghrita** – indicated for Pitta disorders and Timira
- **Yashtimadhu Ghrita** – cooling and strengthening for ocular tissues

### MODE OF ACTION OF TARPANA:

- The **Snigdha and Sheeta Guna** of Ghrita pacify aggravated Vata and Pitta doshas in the ocular region <sup>[12]</sup>.
- **Chakshushya herbs** in Ghrita preparations enhance vision, prevent degeneration, and improve accommodative power. Ghrita acts as a carrier for active herbal principles, allowing better absorption through conjunctival and corneal tissues <sup>[13]</sup>.
- The prolonged contact of medicated ghee with the eye during Tarpana ensures effective local delivery and nourishment of **Rasa-Rakta-Mamsa-Majja dhatu**s involved in vision <sup>[14]</sup>.
- Tarpana improves tear film stability, reduces oxidative stress, and rejuvenates ciliary muscles involved in accommodation <sup>[14]</sup>.

In children, it should be done cautiously with proper paediatric modifications and under expert supervision.

## SUPPORTING LITERATURE AND EVIDENCE:

- A pilot study conducted at IPGT & RA, Jamnagar showed significant improvement in visual acuity in children with myopia using Triphala Ghrita Tarpana over 4 weeks <sup>[8]</sup>.
- Another clinical trial reported that Yashtimadhu Anjana led to symptomatic relief in eye strain and blurring of vision in pediatric subjects <sup>[9]</sup>.

## DISCUSSION

Refractive errors in children are increasingly attributed to environmental and lifestyle changes, including prolonged gadget use, reduced physical activity, and improper diet. While spectacles and modern optical aids manage the refractive power temporarily, they fail to restore the underlying tissue imbalance or halt progression. Ayurveda emphasizes the balance of doshas and nourishment of dhatus (tissues) to maintain ocular health.

Anjana and Tarpana therapies play a dual role — therapeutic and preventive. These interventions aim at dosha pacification, removal of toxins, strengthening ocular structures, and rejuvenating vision-related tissues. The Rasayana properties of Anjana dravyas like Yashtimadhu and Triphala contribute to visual clarity and prevent degeneration.

Tarpana, with its prolonged contact of medicated ghee on the eyes, enhances tear film quality, improves ciliary muscle tone (which plays a key role in accommodation), and provides Rasayana effect at the site of action. It works beyond mere symptomatic relief by nourishing the Rasa-Rakta-Mamsa-Majja dhatus associated with ocular strength and function. These therapies also offer a soothing and psychological calming effect, crucial in children exposed to academic and digital stress.

Furthermore, Ayurvedic nidana can be directly mapped to contemporary triggers, enabling practitioners to identify and rectify lifestyle errors through personalized counselling and integrative treatment. For instance, regulating screen time, improving sleep hygiene, and incorporating visual rest periods along with Ayurvedic interventions create a holistic care model for paediatric refractive errors.

Hence, integrating Ayurvedic principles with modern lifestyle modifications and early intervention strategies offers a promising avenue for managing and potentially preventing the burden of refractive errors in children.

## CONCLUSION

Ayurveda offers a holistic understanding and therapeutic options for the management of refractive errors in children. Interventions like Anjana and Tarpana, when practiced appropriately, can play a preventive and promotive role in paediatric eye care. There is a need for further clinical trials with larger sample sizes to establish standard protocols for these therapies.

## REFERENCES

1. World Health Organization. Visual impairment and blindness. WHO Fact Sheet, 2023.
2. Saxena R, Vashist P, Tandon R. Prevalence of myopia and associated risk factors in school children in North India. PLoS One. 2015;10(3):e0117349.
3. Sushruta. Sushruta Samhita. Uttarantra, 6/26. Edited by Kaviraj Ambikadutta Shastri. Chaukhamba Sanskrit Sansthan, Varanasi, Reprint 2016.
4. Vagbhata. Ashtanga Hridaya. Uttarasthana, 13/5-7. Edited by Harishastri Paradkar. Chaukhambha Surbharati Prakashan, Varanasi, Reprint 2014.
5. Kashyapa. Kashyapa Samhita. Netraroga Nidana Adhyaya. Edited by P.V. Tewari. Chaukhamba Vishvabharati, Varanasi, Reprint 2008.
6. Bhavaprakasha. Bhavaprakasha Nighantu. Netra Rogadhikara. Edited by K.C. Chunekar. Chaukhambha Bharati Academy, Varanasi, 2006.
7. Sharma A, Dwivedi S. Chakshushya effect of Triphala in ocular disorders: A clinical observation. AYU. 2013;34(2):178-181.
8. Vagbhata. *Ashtanga Hridaya*. Uttarasthana, 13/9-11. Edited by Paradkar HS. Varanasi: Chaukhambha Surbharati Prakashan; 2014.
9. Joshi P, Goyal M. Role of Yashtimadhu Anjana in Computer Vision Syndrome among school children. Int J Res Ayurveda Pharm. 2019;10(3):72-76.
10. Sushruta. Sushruta Samhita. Uttarantra, 18/10-13. Edited by Shastri AD. Varanasi: Chaukhamba Sanskrit Sansthan; 2016.
11. Sharma A, Goyal M. Role of Anjana Karma in dry eye syndrome. AYU. 2015;36(4):412-416.
12. Patel N, Shukla V. Efficacy of Tarpana with Jeevantiyadi Ghrita in progressive myopia. J Ayurveda Integr Med Sci. 2020;5(1):34-40.
13. Sane S, Kulkarni A. Pharmacokinetics of Ghrita as a drug carrier: A review. J Ayurveda Case Rep. 2021;6(1):1-6.
14. Bhalerao S, Patil M. Ocular delivery of herbal actives using Ghrita-based Tarpana: Clinical applications. Int Ayur Med J. 2020;8(5):1542-1549.