

AYURVEDIC AND CONTEMPORARY PERSPECTIVES ON ACTIONS OF *MEDHYA DRAVYAS*: A SCOPING REVIEW

Dr. Pallavi Sanjay Mukke^{1*}, Dr. Rushikesh Santoshrao Wazurkar²,

Dr. Devendra M. Bahiram³

¹Assistant Professor Dept. of Dravyaguna Vigyan Matoshri Ayurved College, Dhanore, Tal. Yeola, Dist. Nashik, Maharashtra.

Assistant Professor Dept. of Kayachikitsa Matoshri Ayurved College, Dhanore, Tal. Yeola, Dist. Nashik, Maharashtra.

Assistant Professor in Agadtantra Department, Matoshri Ayurved College, Dhanore, Tal. Yeola, Dist. Nashik, Maharashtra.

Article Received on 24 March 2026,
Article Revised on 13 April 2026,
Article Published on 16 April 2026

<https://doi.org/10.5281/zenodo.19593686>

*Corresponding Author

Dr. Pallavi Sanjay Mukke

Assistant Professor Dept. of
Dravyaguna Vigyan Matoshri
Ayurved College, Dhanore, Tal.
Yeola, Dist. Nashik, Maharashtra.



How to cite this Article: Dr. Pallavi Sanjay Mukke^{1*}, Dr. Rushikesh Santoshrao Wazurkar², Dr. Devendra M Bahiram³ (2026). Ayurvedic and Contemporary Perspectives on Actions of Medhya Dravyas: A Scoping Review. World Journal of Pharmaceutical Research, 15(8), 757-762.

This work is licensed under Creative Commons Attribution 4.0 International license.

ABSTRACT

Developmental disabilities encompass a wide spectrum of disorders resulting from injury to the developing brain during prenatal, perinatal, or postnatal stages, leading to various long-term conditions. Cognitive deficits may occur as part of neuropsychiatric disorders or manifest independently as developmental impairments, thereby necessitating the use of nootropic agents to enhance cognitive function. In recent years, there has been increasing global interest in exploring medicinal plants for cognitive enhancement due to their relatively fewer adverse effects. In Ayurveda, a specific group of herbs known as *Medhya Rasayanas* are described for their multifaceted benefits, particularly in improving memory and intellect through their unique *Prabhava* (specific action). Ayurveda thus offers a well-documented list of nootropic herbs with multidimensional therapeutic applications in diverse clinical

conditions. This review presents a compilation of selected *Medhya* (nootropic) *dravyas* such as *Haritaki* (*Terminalia chebula*), *Amalaki* (*Phyllanthus emblica*), *Bhallataka* (*Semecarpus anacardium*), *Pippali* (*Piper longum*), *Kushmanda* (*Benincasa hispida*) and *Shatavari* (*Asparagus racemosus*) that are beneficial in managing cognitive deficits associated with

developmental and neuropsychiatric disorders, and highlights their role in enhancing memory, intellect, and overall cognitive function.

KEYWORDS: *Ayurveda*, *Medhya dravyas*, Nootropic activity, Memory enhancing, *Rasayana*.

INTRODUCTION

Medhya Rasayanas are a group of medicinal plants described in Ayurveda for their multifaceted therapeutic benefits, particularly in enhancing memory and intellect through their specific *Prabhava* (unique action). As per the modern science the *Medhya Dravyas* are referred to nootropic drugs. Nootropic agents are believed to support brain health by improving oxygen supply and stimulating neural growth. The term “nootropic” is derived from the Greek words *nous* (mind) and *trepein* (to bend or turn), and refers to substances that enhance memory, cognition, intelligence, and overall nervous system function.^[1] Recent studies have highlighted the promising potential of *Medhya Rasayanas* as herbal nootropic drugs in the management of developmental disabilities in children. According to the World Health Organization, health encompasses physical, mental, and social well-being; since physical health is closely linked to mental health, impaired mental status can negatively affect intellectual development. In this context, the term *Medha* denotes intelligence and retention capacity, while *Rasayana* refers to therapeutic measures that promote nourishment, immunity, longevity, memory, and intellect when practiced regularly. Broadly as per Ayurveda, *Medhya Rasayanas* enhance intellectual capacity by maintaining equilibrium of the Tridosha. At the level of *Rasa Dhatu*, they are believed to stimulate and strengthen *Agni*, while facilitating proper circulation of *Rasa* through cleansing and opening the microchannels (*Srotas*), thereby supporting improved mental and cognitive performance. *Medhya* encompasses the integrated functioning of the three mental faculties—*Dhee*, *Dhriti*, and *Smriti* which together support optimal cognitive performance.^[2] These drugs enhance intellect, retention capacity, and memory. Additionally, *Rasayana* formulations are believed to act on the hypothalamic–pituitary–adrenal (HPA) axis and help regulate the secretion of key neurotransmitters such as dopamine, serotonin, and acetylcholine, thereby contributing to improved cognitive and mental function.^[3]

Table 1: List of Medhya Dravyas with their properties as per Ayurveda.

Sr. no.	Name of drug	Rasa	Virya	Vipaka	Doshagnata	Karma
1.	Haritaki	Kashaya	Ushna	Madhura	Tridosahara	Vranya, rasayan, medhya, kusthaghna
2.	Amalaki	Amla Pradhan lavan varjit panchrasa	Shita	Madhura	Tridosahara	Vayasthapana, vrushya, shukrala, rasayan, bhagna - sandhankruta
3.	Bhallataka	Katu	Ushna	Madhura	Kapha-vata hara	Arshoghna, medhya, gulmahara, grahanihara
4.	Pippali	Katu	Ushna	Madhura	Kapha-vata hara	Arshoghna, kushtaghna, medhya, gulma hara, pramehaghna
5.	Kushmanda	Madhura	Shita	Madhura	Vata-pitta shamaka	Brumhan, vrushya, medhya
6.	Shatavari	Madhura, tikta	Shita	Madhura	Vata-pitta shamaka	Hrudya, vrushya, medhya

DISCUSSION

In Ayurveda, the concept of *Medhya Karma* is comprehensive and multidimensional, encompassing the enhancement of memory, intellect, understanding, and emotional balance. The reviewed drugs demonstrate these effects through their distinctive *Dravyaguna* attributes, which help regulate the *Tridosha*, promote *Sattva*, and support the functions of *Dhi* (the ability to grasp or assimilate information), *Dhriti* (the capacity to retain what has been learned), and *Smriti* (the faculty of recalling stored information).

1. Haritaki

Terminalia chebula is rich in ellagic acid, a polyphenolic dilactone known for its anti-inflammatory and neuroimmunomodulatory properties. In a chronic unpredictable mild stress model in mice, ellagic acid improved neuroendocrine and inflammatory parameters and demonstrated significant antidepressant effects. It may also alleviate anxiety by inhibiting Toll-like receptor 4 (TLR4) and activating NF-E2-related factor (Nrf2).^[4] Corilagin, isolated from *Terminalia chebula*, significantly improved memory deficits caused by sleep deprivation. This effect was linked to inhibition of NADPH oxidase 2 and activation of NF-E2-related factor (Nrf2).^[4]

2. Amalaki

Alzheimer's disease is marked by progressive memory and cognitive decline, along with reduced cerebral glucose metabolism. One of the studies assessed the effects of Amalaki Rasayana, an Ayurvedic formulation, in the A β PP-PS1 mouse model of Alzheimer's diseases and compared its efficacy with Donepezil. Memory was evaluated using the Morris Water Maze, and brain metabolism was analyzed through ¹³C-labeled glucose tracing and NMR spectroscopy. AR treatment improved learning and memory in Alzheimer's diseases mice. It also enhanced ¹³C labeling of glutamate, GABA, and glutamine, indicating improved glutamatergic and GABAergic metabolic activity—comparable to donepezil. These findings suggest that Amalaki Rasayana may help improve memory and cognitive function in Alzheimer's diseases.^[5]

3. Bhallataka

One of the studies evaluated CNS activity of milk extract of nuts of *Semecarpus anacardium* on albino mice of either sexes. Phytochemical screening showed flavonoids, carbohydrates, and phenolics. Acute toxicity testing revealed no mortality up to 2 g/kg (LD₅₀ > 2 g/kg). The extract showed no significant effect on locomotor activity at 75–225 mg/kg, except mild CNS depression at 150 mg/kg, and demonstrated nootropic activity in amnesia models. Diazepam, a GABA-mimetic agent, is known to cause memory impairment. Conversely, inhibition of GABA-B receptors has been shown to enhance learning and memory processes. The milk extract of nuts of *Semecarpus anacardium* demonstrated a protective effect against diazepam-induced amnesia, possibly by promoting the indirect release of acetylcholine (ACh) in the brain.^[5]

4. Pippali

Piper longum exhibits significant nootropic potential, primarily through its multi-target modulation of proteins involved in neurological pathways. Network pharmacological analysis identified 159 phytochemicals targeting 1109 human proteins, with a strong association toward nervous system disorders. A key finding is the frequent targeting of MAPT (tau protein), implicated in neurodegenerative diseases such as dementia. Major bioactive compounds like Piperine and Piperlongumine show neuroprotective, anti-epileptic, antidepressant, and anti-convulsant activities. The herb influences critical pathways including

- ✓ Wnt signaling (memory and brain development)
- ✓ Neuroactive ligand–receptor interactions
- ✓ Signal transduction pathways

- ✓ Mitochondrial electron transport chain (energy metabolism).

By regulating proteins involved in synaptic transmission, neuronal development, and oxidative stress, *P. longum* may enhance memory, protect against neurodegeneration, and improve cognitive performance.

5. Kushmanda

Since *Chitta* is considered synonymous with *Medha* (intellect), its role extends to cognitive enhancement. By effectively pacifying *Pitta Dosha*, which influences intellectual functioning, *Kushmanda* supports mental balance.^[7] Its *Madhura and Amla Rasa, Sheeta Virya, and Madhura Vipaka* nourish the mind, sense organs, and body, while its *Tridoshahara* property promotes overall cognitive and psychological stability. A clinical study has reported that *Kushmanda (Benincasa hispida)* is beneficial in *Chitta Vikara* (mental disorders). Rich in essential micronutrients such as vitamins A, B, and C, along with iron, zinc, and magnesium, *Kushmanda* supports optimal brain function. Hence, it can be considered both a nutritional supplement and a nootropic agent.^[6]

6. Shatavari

Asparagus racemosus is described in Ayurveda as a nervine tonic. Nutraceutical preparations derived from *A. racemosus* have demonstrated adaptogenic, neuroprotective, antioxidant, anti-inflammatory, and nootropic effects in both preclinical and clinical studies, with minimal adverse effects. Its extracts help normalize altered neurotransmitter levels and protect neurons against oxidative stress-induced damage.

CONCLUSION

Medhya dravyas such as *Haritaki, Shatavari, Kushmanda, Pippali, Bhallataka, and Amalaki* are employed to enhance memory through diverse mechanisms. They may be administered individually, in combination, or along with different *Anupanas* (vehicles) to optimize their therapeutic efficacy. Such medicinal plants warrant extensive global research to further explore and validate their potential in enhancing mental and cognitive functions.

Conflict of interest: NA

Funding: NA

REFERENCES

1. “Role of Medhya Rasayanas (Nootropic Drugs) in Developmental Disabilities of Children.”
https://www.ijhsr.org/IJHSR_Vol.9_Issue.6_June2019/IJHSR_Abstract.045.Html, 2019.
2. Chaudhari K, Murthy ARV (2014) Effect of rasayana on mental health-a review study. *International Journal of Ayurveda and Alternative medicine*, 2: 1-7.
3. Bajrang Ramawat, Varsha Jangid, Kashinath Samagandi, Review article on the role of Medhya Rasayana : Enhancing the Intellectual Power. *J. Ayu. Int. Med. Sci.*, 2022; 7(5): 69-74.
4. Huang, X. (2020). The effect and mechanism of Ellagic Acid on the improvement of depression-like behavior in chronic stress model mice. *Hainan Univ.*, doi: 10.27073/d.cnki.ghadu.2020.001278
5. Wang, W., Yang, L., Liu, T., Ma, Y., Huang, S., He, M., et al. (2020a). Corilagin ameliorates sleep deprivation-induced memory impairments by inhibiting NOX2 and activating N.
6. Tiwari V, Saba K, Veeraiah P, Jose J, Lakhotia SC, Patel AB. Amalaki Rasayana improved memory and neuronal metabolic activity in AbPP-PS1 mouse model of Alzheimer's disease. *J Biosci*, 2017 Sep; 42(3): 363-371. doi: 10.1007/s12038-017-9692-7. PMID: 29358550.
7. Shaikh, Mohd. Farooq & Alla, Thiru & Venkat Rao, Nimmagadda & Prasad, Kummara & Hussain, Shalam & Nandakumar, K & Gouda, T.S. & Satyanarayana, S.. (2007). A study on CNS effects of milk extract of nuts of *Semecarpus anacardium*. Linn, (Anacardiaceae). *Pharmacologyonline*, 1: 49-63.
8. Agnivesh Charaka Samhita of Charaka, Chikitsa Stana. Ch. 8, Verse 50 Acharya Vidhyadar Shukla, Pro Ravidatta Tripathi Delhi: Chaukhamba Sanskrit Pratishthan, 2009. 109.
9. Neeralakeri, Sarita S1; Varma, Ashish2; Deshmukh, Sourabh3. Efficacy of Kushmanda *Benincasa hispida* (thunb.) Cogn. and Yastimadhu (*Glycyrrhiza glabra* Linn.) on Medha (intellectual capacity) in Malnourished School-Going Children: A Study Protocol of an Open-Label Randomized Controlled Clinical Trial. *Journal of Research in Ayurvedic Sciences*, 8(2): 93-98, March-April 2024. | DOI: 10.4103/jras.jras_146_23.