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# Review article on the role of *Medhya Rasayana* : Enhancing the Intellectual Power

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## ABSTRACT

In this period of global competitiveness, the spirit of competition is instilled in each individual from childhood. Even to get entrance to a reputable nursery school, the kid must pass several tests. Then, for success in higher education, such as primary, secondary, and post-secondary education, continual vigilance and intellectual sharpness are essential. The capacity to retain what has been learned and to recall it at the appropriate time and in the right place is the only way to succeed at every level. In such circumstances, a person's grasping and retention abilities are important. According to Ayurveda both *Vata* and *Kapha Dosha* must be harmonized in order to increase *Medha* or Intellectual. Memory is improved when *Vata* and *Kapha* are together. *Pitta Dosha* (fire element) is important for increasing sharpness and IQ. To accomplish this objective by balancing the *Tridosha*, Ayurveda refers to both single medications and a class of pharmaceuticals are named as "*Medhya Rasayanas*" in the *Charaka Samhita*. They are *Mandukaparni Swarasa* (*Centella asiatica*), *Yastimadhu Churna* (*Glycyrrhiza glabra*), *Guduchi Swarasa* (*Tinospora cordifolia*), and *Shankhapushpi Kalka* (*Convolvulus pluricaulis*). *Mandukaparni Swaras*, *Yastimadhu Churna* with *Ksheer*, *Guduchi Swaras*, and *Shankhapushpi Kalka* are anxiolytic, disease-relieving, and boosters of strength, *Agni*, complexion, voice and *Medhya*. *Medhya Rasayana* medicines are used to suppress and treat mental illnesses in people of various ages. These medications improve the ability to acquire (*Dhi*), retain (*Dhriti*), and remember information (*Smriti*). *Medhya Rasayana* medicines are used to prevent and cure mental disorders and health Promotion in people of all age's groups.

**Key words:** *Medhya Rasayana*, *Ayurveda*, *Medha*, *Dhi*, *Dhriti*, *Smriti*, *Neurotransmitters*

## INTRODUCTION

While describing Health Definition, WHO Considered Physical, mental and social acceptance of health, and physical health is directly related to mental health, Poor health with poor mental state is responsible for Poor Intellectual.

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'*Medha*' refers to intelligence and/or retention, while '*Rasayana*' refers to a medicinal treatment or preparation that, when followed on a regular basis, improves nutrition, health, memory, intellect, immunity, and hence lifespan. *Medhya* is mentioned in *ayurveda* in a wide sense. *Medhya* is made up of the three mental faculties, *Dhee*, *Dhriti*, and *Smriti*, which are all interconnected.<sup>[1]</sup>

*Medhya Rasayana* is beneficial in two types of situations: healthy and ill. In order to boost general intelligence in healthy persons. In neurological and psychiatric illnesses, memory loss, cognitive deficiencies, poor mental function, and other intelligence-related symptoms are common. *Dhriti*, which has control over the functions of *Manas*<sup>[2]</sup> is reduced by *Rajas Ahara*. Other causes include an inability to control one's thoughts, excessive pondering, a lack of confidence, failure to attain set goals, and a person who falls behind.

*Medhya Rasayana* is a "Nootropic Drug". The word nootropic comes from the Greek word's nous, which means "mind," and trepein, which means "to turn". Memory enhancers, cognitive enhancers, intelligence enhancers and nerve tonics are all terms used to describe nootropic medications. By encouraging nerve development, nootropic medications boost the oxygen supply to the brain. In a recent paper, the potential of *Medhya Rasayana* (herbal nootropic medicines) for the Mental, Physical health was discussed.

### OBJECTIVE OF THE STUDY

Analysis of "*Medhya Rasayana*" in enhancing the intellectual power

### MATERIALS AND METHODS

Conceptual study comprises the review of the available literature in the ancient classical texts, scientific journals, dissertations, research paper etc. concerned with this concept.

#### *Medhya Rasayana* in Brain Function

According to Arunadutta - *Medha* is a faculty of *Buddhi* and *Buddhi* is composed *Dhi*, *Dhriti* and *Smriti*.

*Medhya* is made up of all three mental faculties, *Dhee*, *Dhriti*, and *Smriti*, which are all interconnected. The following faculties can be subdivided into *Medha*:

1. *Dhi* - Power of Grasping
2. *Dhriti* - Power of Retention
3. *Smriti* - Power of recollection

#### Relation Between *Tridosha* and *Medha*

##### *Vata Dosh*

- *Parana Vayu* - controlling the function of *Buddhi* and *Mana*.
- *Udana Vayu* - Help in recalling the past experience.<sup>[3-4]</sup>

##### *Pitta Dosh*

*Sadhaka Pitta* - Promote *Medha*<sup>[5]</sup>

##### *Kapha Dosh*

In their natural condition, *Tarpaka* and *Avalambaka Kapha* confer wisdom and intellect. *Kapha* is also in

charge of the better features of *Dhrti*, which regulates mental instability.<sup>[6]</sup>

So, *Medhya Rasayana* drug shows his *Medhya Karma* while working on all the three *Doshas*.

*Rasayana Chikitsa* nourishes the blood, lymph, meat, fat tissue, and sperm. This protects the person from developing chronic degenerative disorders. *Dhatus*, *Agni*, *Srotansi* and *Ojas* are the fundamental aspects of the body that are influenced by the therapy. The *Bheshaja* (medicine) in *Rasayana* treatment is classified into two types:

1. *Swasthasyaurjaskara* - Toning up the health of a healthy person
2. *Kinchit Artasya Rognut* - Treating the ailments of the patients

#### *Medhya Rasayana* Drugs<sup>[7]</sup>

- *Mandukaparni Swarasa*
- *Yasthimadhu Churna*
- *Guduchi Swarasa*
- *Sankapushpi Kalka*

Drug Name	<i>Yasthimadhu</i>	<i>Mandukaparni</i>	<i>Guduchi</i>	<i>Shankpushpi</i>
Botanical Name	<i>Glycyrrhiza glabra</i>	<i>Centella asiatica</i>	<i>Tinospora cordifolia</i>	<i>Convolvulus plauricaulis</i>
Rasa	<i>Madhura</i>	<i>Tikta, Kashaya, Madhura</i>	<i>Tikta, Katu, Kashaya</i>	<i>Tikta, Kashaya</i>
Guna	<i>Guru, Singdha</i>	<i>Laghu, Sara</i>	<i>Guru, Snigdha</i>	<i>Snigdha, Pichhila</i>
Virya	<i>Sheeta</i>	<i>Sheeta</i>	<i>Ushna</i>	<i>Sheeta</i>
Vipaka	<i>Madhura</i>	<i>Madhura</i>	<i>Madhura</i>	<i>Madhura</i>
Karma	<i>VP Shamak</i>	<i>VPK Shamak</i>	<i>VPK Shamak</i>	<i>VPK Shamak</i>

#### Probable mode of action: *Medhya Rasayana*

According to Acharya P.V Sharma, *Medhya* drugs act in accordance with *Prabhava*.<sup>[8]</sup> *Medha* will benefit from drugs that mostly contain *Tikta Rasa*, *Laghu Snigdha Guna*, *Sheet Virya*, and *Madhura Vipaka*. *Rasa*, *Srotas*, and *Agni* will all be affected by the effects of these *Prabhava* and *Rasadi*.<sup>[9]</sup>

Medhya Rasayana drug are two types<sup>[10]</sup>

1. *Sheet Virya* and *Madhura Vipaka Dravya*, it promotes *Kapha* and enhances Retention / *Dharana Karma*. Eg. - *Yashtimadhu*, *Sankhpusphi*.
2. *Ushana Virya* and *Tikta Rasa Dravya*, it promotes *Pitta* and enhances *Grahana/Grasping*, *Smriti/Memory*. Eg. - *Guduchi*

**Medhya drugs acts at various level<sup>[11]</sup>**

1. Level of *Rasa*
2. Stimulating and improving the function of *Agni*
3. Improve Circulation of *Rasa* by opening and cleaning the micro channel and thus improving *Medhya* function.

The action of *Medhya Rasayana* can be explained in modern neurophysiology using neurons and neurotransmitters. Many studies have demonstrated that *Medhya Rasayana* improves learning, memory, and attention span via modulating cholinergic and GABAergic receptors. Neurons are protected from over excitation and energy depletion by their antioxidant characteristics. They help neuromodulators function by maintaining the right ratio of excitatory and inhibitory neurotransmitters, according to research articles. Nootropics are thought to function by affecting the availability of neuro-chemicals (neurotransmitters, enzymes, and hormones) in the brain, inducing oxygen flow to the brain, or encouraging neuron growth.

*Medhya* drug raise the levels of neurotransmitters, notably acetylcholine, and enhance blood flow to the brain, improving oxygen and nutrition availability to the brain, which helps with memory and brain function.<sup>[12]</sup>

***Mandukaparni (Centella asiatica Linn.)***

*Tikta Rasa*, *Sheeta Virya*, *Madhura Vipaka*, and *Kapha-Pittahara* make up *Mandukaparni*. *Tikta Rasa* operates as *Medhya* due to its *Akasha* and *Vayu Mahabhuta*, as well as *Laghu Guna*, *Deepana*, *Pachana*, and *Sroto Visodhana Karma*. The medicine is *Mana Prasadaniya* because it is *Sheeta* in *Virya* and raises the *Tarpaka* and

*Avalambaka Kapha*, therefore increasing the *Dharana Shakti*.

*Centella asiatica* Linn. (*Mandukaparni*) as *Medhya* utilised for medicinal purposes (cognitive enhancer).<sup>[13]</sup> Saponin (medacoside, asiaticoside, medacassoside, asiatic acid, a novel triterpenic acid) is a major ingredient.<sup>[14]</sup> They have behavioural effects in addition to being neuroprotective.<sup>[15]</sup> promoter of brain development.<sup>[16]</sup> The neural underpinning for better learning and memory is thought to be dendritic arborization.<sup>[17]</sup> The Brahmoside and braminoside are responsible for CNS stimulant. They primarily work by enhancing the dendritic arborization of CA3 neurons in the Hippocampus.

***Yastimadhu (Glycyrrhiza glabra Linn.)***

*Yashtimadhu's Prabhava* (unexplainable action) causes *Medhya* acts. *Yashtimadhu's "Sadindriya Prasadaniya" Karma* of *Madhura Rasa* (sweet taste)<sup>[15]</sup> nourishes *Mana* and *Buddhi*. The *Snigdha Guna* (unctuous property) *Madhura Rasa* and *Madhura Vipaka* attributes of *Yashtimadhu*<sup>[18]</sup> impact the functioning of *Mana* and *Buddhi* by regulating the *Chala Guna* (moveable property) of *Vata*.

Glycyrrhizin is the active ingredient in *G. glabra* and is responsible for its 50-fold sweetness<sup>[19]</sup> increasing glucose bioavailability at the brain level and improving brain activity.<sup>[20]</sup> The presence of flavonoids, which are powerful antioxidants, is critical in reducing oxidative damage to the brain and thereby improving brain functioning.<sup>[21]</sup> It also has acetyl cholinesterase inhibitory activity, which boosts the action and duration of the neurotransmitter acetylcholine in central cholinergic pathways, which are crucial for learning and memory.<sup>[22]</sup> Liquorice has a strong effect on memory enhancing activity in dementia, improving learning and memory in scopolamine-induced dementia.

***Guduchi (Tinospora cordifolia)***

*Guduchi Ghana's* most likely mode of operation *Guduchi* is *Ushna*<sup>[23]</sup> in *Virya* (potency), hence it works by eliminating *Tamas* and vitiated *Kapha* from *Manovahasrotas*. *Pachaka Pitta* is also boosted. Thus, *Agni (Bhutagni* unhindered) position ensures the

*Indriya's* sustenance (sense organs). *Pachaka Pitta* also governs the functioning of *Alochaka* and *Sadhaka Pitta*, enhancing *Buddhi* (intellect) and *Medha* (spirituality) (Grasping power). The aqueous root extract of this drug may stimulate the release of neuromodulators or neuronal dendritic growth stimulating factors that alter the activity of neurotransmitters that are involved in learning and memory, which thereby contributes to enhanced learning and memory.<sup>[24]</sup>

*Guduchi* (*T. cordifolia*) protects normal learning processes by maintaining hippocampal neurons, according to research. Because the hippocampus is the key centre for learning and memory, protecting it from harm helps to preserve the cognitive process.<sup>[25]</sup>

#### **Shankhapushpi (*Convolvulus pleuricaulis* Chois)**

*Medhya* is well appreciated (intellect promoter).<sup>[26]</sup> In an experimental model, *Shankhapushpi* significantly reversed the social isolation stress-induced lengthening of onset and decrease in pentobarbitone-induced sleep, as well as enhanced total motor activity and stress-induced antinociception.<sup>[27]</sup> *Ayushman-8* (which contains *Shankhpushpi*, *Brahmi* and *Vacha*) is said to help with *Manasa-Mandata* (mental retardation).<sup>[28]</sup> A *Shankhapushpi* combination including equal amounts of *Shankhapushpi*, *Sarpagandha*, and *Gokshura* was shown to be efficacious in *Chittodvega* (anxiety disorders).<sup>[29]</sup> *Shankhapushpi* relieved the signs and symptoms of *Chittodvega* (anxiety disorders).<sup>[30]</sup> *Shankhpushpi* relax nerves by controlling the body's production of the stress chemicals adrenaline and cortisol, according to herbalists.<sup>[31]</sup>

#### **DISCUSSION**

Poor memory and intellectual, according to Ayurveda, can be caused by a variety of factors, the most common of which are malnutrition and chemical imbalances in brain functioning. According to Ayurveda, memory problem is caused by the *Kapha Dosha* of the body, which is vitiated and causes a dull mind or disinterestedness. In the same way, a vitiated *Vata Dosha* causes stress and confusion, obstructing knowledge and memory. All nerve functioning and memory is controlled by the *Vata Dosha*. Any medicine

that improves this process of grasping, remembering, and recalling will be extremely beneficial, especially to children. For this harmonization, Ayurveda refers to both single medications and a class of pharmaceuticals as "*Medhya Rasayana*." Four medicinal plants are named as "*Medhya Rasayanas*" in the *Charaka Samhita*.

These drugs promote the intellect, retention power and memory, moreover *Rasayana* drugs work on hypothalamus pituitary adrenal axis and normalize the secretion of neurotransmitters such as dopamine, serotonin, acetyl choline and thus can improve the mental function.

#### **CONCLUSION**

*Medhya Rasayana* aid to improve brain circulation, change neurotransmitter concentrations, reduce brain inflammation, activate the production of new brain cells, and protect the brain from free radical damage. According to Ayurveda, *Medhya Rasayana* accomplish enhancing intellectual capacity objective by balancing the *Tridosha*. At the level of *Rasa*, *Medhya Rasayana* work by stimulating and increasing the function of *Agni*, as well as promoting *Rasa* circulation by opening and cleansing the micro channel for improved mental performance. As a result, medicinal plants must be explored internationally in order to improve cognitive function and mental performance due to their low risk of side effects.

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