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Reviewing Medhya Dravya: Ayurveda's Approach To Enhance The Intellectual Power

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Abstract

Ayurveda has two main aims – one is to maintain the health of a healthy individual and the second is to treat a diseased person. *Rasayana Chikitsa* has a significant role in meeting Ayurveda's first goal. *Rasayana Chikitsa* is also a part of *Ashtanga* Ayurveda which presents its importance. *Rasayana* is any herb, food, or activity that confers youthfulness and cures diseases. If taken properly, the *Rasayana* prevents early aging and keeps you young and active both physically and mentally. *Rasayana* primarily refers to nourishment on all scales, from the macro to the micro-cellular level. All *Rasayanas* are nutrition promoters in general but there are certain target-specific *Rasayana Medhya Rasayana* for the brain, *Hridya Rasayana* for the heart, *Chakshusya Rasayana* for the eye, etc. It accelerates the formation of new *Dhatus* and retards aging. This way, it comprehends our body's vital energy and boosts immunity. A good intellectual power acts as a catalyst in all aspects of life. Ayurveda provides a list of herbs known for nootropic activity and their multi-dimensional utility in various conditions. *Yashtimadhu*, *Guduchi*, *Shankhapushpi*, and *Mandookparni* are the four *Medhya Rasayana* that *Acharya Charaka* briefly explained. It is said that *Shankhapushpi* is the best among all *Medhya Rasayana Dravya*. These drugs enhance one's capacity for acquiring knowledge (*Dhi*), retention (*Dhriti*), and memory (*Smriti*). *Medhya Rasayana* medications are used to promote health and prevent and treat mental illnesses in people of all ages. Recently there has been a tremendous urge to explore medicinal plants globally for improving cognitive function owing to their less adverse effects. Throughout the *Nighantu* period, more cognitive enhancers were occasionally introduced to classical literature under the label *Smritikara Dravya* and in folk practice.

Keywords: *Medhya Rasayana*, Memory, Nootropics, Intellectual power, *Medha*, *Dhi*, *Dhriti*, *Smriti*.

Introduction

These days, cognitive impairment is becoming more and more of an issue, mostly as a result of changing lifestyles. Longevity, (better) memory, comprehension, health, youthful vitality, luster, complexion, (better) voice, generosity (in one's mind), energetic body and organs, and attractive nature (i.e., captivating beauty/handsomeness) are all attained by *Rasayana* (rejuvenation). *Medhya Rasayana*, a part of *Rasayanachikitsa* addresses enhancing and preventing cognitive dysfunction and intellect, respectively. *Medha*, which means intellect or retention, and *Rasayana*, which means therapeutic method or preparation, when regularly used, will improve nourishment, health, memory, intellect, immunity, and ultimately lifespan. “*Medhya*” is the name given to *Dravya* who raises the *Medha*. *Medhya Rasayana* is beneficial in two types of situations: healthy and ill. Even though this function and *Mana* are related, this *Medhya Karma* is associated with *Nadisansthan* since *Nadisansthan* is the *Vishishtha adhisthana* of *Mana*'s presence. Because *Nadisansthan* and the brain are related, that's why the *Medhya Dravya* also known as a brain tonic. The term “*Medha*” is used in *Ayurveda* in a much larger sense. *Medha* is made up of three interrelated factors: *Dhee* (intelligence), *Dhriti* (retention), and *Smriti* (memory)¹. The stability of *Smriti*, *Dhriti*, and *Dhee* is attributed to *Medhya Karma*². *Satva*, *Rajas*, and *Tamas* are all involved in these. *Manoguna* is represented by *Satva*, and the *Manodosha* are represented by *Rajasika* and *Tamasika*. The major goal here is to restore *Satva* in an individual because this *Rajasika* has *Chanchalatva*, which causes mental agitation, and *Tamasika Guna* has *mandatwa*, which causes improper perception. Whatever that is not *Satvaguna* interferes with the process of learning and memory because while *Medha* varies from person to person, it still depends on it. An understanding of the learning and memory process from a modern perspective is necessary in order to understand the *Karmukatva* of *Medhyadravyas*. *Medhya Rasayana* is a “Nootropic Drug”. *Noos*, which means “mind,” and *trope*, which means “to turn,” are the Greek words from which the word “nootropic” derives. Nootropic drugs are referred to as memory enhancers, cognitive enhancers, intellect enhancers, and nerve tonics. Nootropic drugs increase the brain's oxygen supply by promoting neuron growth. The addition of natural nootropics to the body will improve blood flow to the brain, supply essential nutrients, and increase energy and oxygen flow to the brain. Nootropics administration will minimize the consequences of brain aging and protect the brain from toxins. Combining the powers of grasping (*Grahan*), retention (*Dharun*), and recollection (*Smaran*) results in memory. Memory loss is often associated with neurological and psychiatric disorders. Psychiatric disorders are now a significant public health concern. *Medhya Rasayana* is not specifically mentioned as a separate category in the *Charak Samhita*. But there is mentioning of four drugs viz. *Mandookaparni svarasa* (juice), *Yashtimadhu choorna* (powder) with *Goksheera* (Cow's milk), *Guduchi svarasa* and *Shankhapushpi kalka* (paste) as *Medhya Rasayanas*. Among all *Medhya Rasayana Dravya Shankapushpi* is said to be the best. According to herbalists, *Shankhpushpi* soothes the nerves by regulating the body's synthesis of the stress hormones cortisol and adrenaline.³ The properties ascribed to these formulations include *Medhya* (memory promoting), *Ayushya* (longevity enhancers), *Amaya Nashana* (eradicate diseases), and *Balagni varna Svava Vardhana* (enhances strength, digestive fire, complexion, and voice). In *Sushruta Samhita*, more information pertaining to the *Medhya* drugs can be found

such as different formulations with their mode of use, etc. The explanation of *Medhya Dravya* is found in “*Medhyayushkamiya Adhayay*” by *Acharya Sushruta*. *Medhya Rasayana* explained by *Acharya Sushruta* other than that explained by *Acharya Charak* are *Swate avalguja*, *Chitraka mool*, *Mandukparni*, *Brahmi*, and *Vacha*. *Ayushman-8* (containing *Shankhpushpi*, *Brahmi*, and *Vacha*) was reported to be effective on *Manasamandata* (mental retardation).⁴ Many individual drugs as well as combination drugs (*Yoga*) have been prescribed in the *Kashyapa Samhita* for *Lehana Karma*. These medications are excellent memory enhancers which are *Brahmi*, *Mandukparni*, *Bala*, *Atibala*, *Triphala*, *Chitraka*, *Vacha*, *Shatapushpa*, *Shatavari*, *Danti*, *Nagbala*, *Samvardhan Ghrita*.

Aims and objectives

The efficacy and mode of action of *Medhya Dravya* have been reviewed, along with their memory-boosting properties, as well as their mode, method, and timing of administration.

Materials and methods

The review of existing literature on this concept, including research papers, dissertations, scientific journals, and ancient classical texts, is part of the conceptual study.

Concept of Rasayana in Ayurveda Classics-The Rasayana therapy

“A long lifespan, enhanced memory, understanding skills, health, vitality, luster, complexion, (better) voice, mental generosity, lively body, and organs, humility, and attractive nature are attained by *Rasayana* (rejuvenator). It also ensures the health of the body's tissues and other components⁵. The three mental faculties—*Dhee*, *Dhriti*, and *Smriti*—are all present in *Medha* and these are interrelated. As per *Acharya Charak*, the proper equilibrium of the *Agni* of *Dhatu*, *Vayu*, and *Srotas* is crucial for preserving the body's natural strength, color, and lifespan. *Rasayana Chikitsa* (therapy) primarily aims to nourish the body's blood, lymph, flesh, adipose tissue, and semen to protect the patient against long-term degenerative illnesses. The therapy has an impact on the body's basic components, including the *Agni*, *Dhatu*, *Oja*, and *Srotas*.”

Causes for Memory Impairment

According to Ayurveda, knowledge is acquired or learned through a series of complex interactions involving the coordination of, *Mana* (the psychic center), *Indriyas* (the cognitive organs), and *Indriyarthas* (the sensory organs). As a result, disruption of any function results in cognitive function impairment. *Jatharagni*, *Dhatvagni*, *Triguna* (*Satwa*, *Raja*, and *Tama*), and *Tridosha* (*Vata*, *Pitta*, and *Kapha*) maintain the proper coordination and balance of these factor's functioning. Head trauma, brain infections, cerebral tumors, drug and child abuse, poor nutrition, normal pressure hydrocephalus, vitamin B12 deficiency, high blood pressure, and depression are a few possible causes of learning and memory impairments. *Acharya Sushruta* has mentioned *Buddhimedhakara Gana*⁶ which states that one should put what they have learned into practice repeatedly, Thus, the initial stage will always include learning and memory. If someone is unable to retain after making several tries, the drug plays a secondary role here.

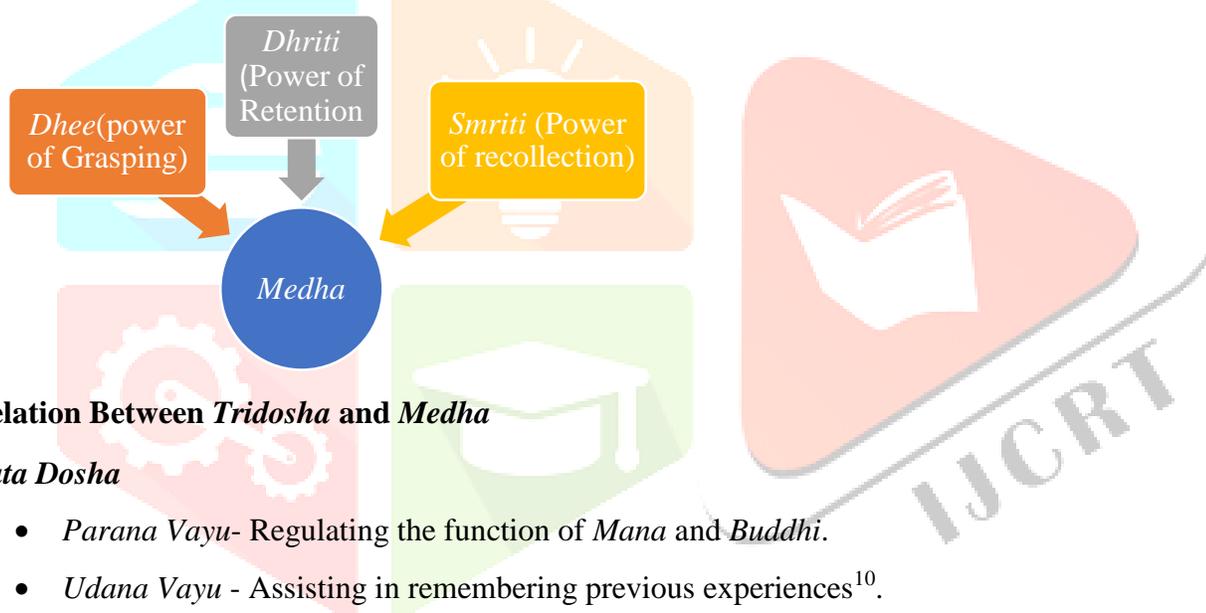
Medhya Rasayana in Brain Function

As per Arunadutta, *Dhi*, *Dhriti*, and *Smriti* comprise *Buddhi*, and *Medha* is one of *Buddhi*'s faculties. *Medha* comprises three interrelated mental faculties: *Dhee*, *Dhriti*, and *Smriti*.

1. *Dhi* (Power of Grasping)- "*Samam Buddhihi Pashyati*" is what *Charaka* said, attempting to identify *Dhi* by its particular function.⁷ According to *Chakrapani*, knowledge of an object is the sense of "as it is" i.e. "*Yatharthanubhava*" or the perception of genuine knowledge, is *Dhi*.

2. *Dhriti* (Power of Retention)- In the context of "*Swanigraha*," the significance of the association between *Dhriti* and *Mana* has been emphasized under the function of *Mana* because *Dhriti* acts as a controlling factor that keeps the *Mana* from indulging in destructive and non-beneficial items.⁸

3. *Smriti* (Power of recollection)- One way to explore it is to recall an object from *Mana*, such as "*Smriti Smaranena*."⁹ It is known as "*Smarnam Smriti Uchyate*" in *Charaka Sharira*, which means "subjects' ability to recall things." It has been described in *Charaka* as one type of *Buddhi* or *Prajna*.



Relation Between Tridosha and Medha

Vata Dosha

- *Parana Vayu*- Regulating the function of *Mana* and *Buddhi*.
- *Udana Vayu* - Assisting in remembering previous experiences¹⁰.

Pitta Dosha

Sadhaka Pitta - Promote *Medha*¹¹

Kapha Dosha

In their original state, *Tarpaka* and *Avalambaka Kapha* grant intelligence and wisdom. The superior qualities of *Dhriti*, which controls mental instability, are also attributed to *Kapha*¹². So, *Medhya Rasayana* drug shows his *Medhya Karma* while working on all three *Dosha*.

There are two categories of *Bheshaja* (medicine) used in *Rasayana Chikitsa*:

1. *Swasthasyauryjaskara* - Enhancing a healthy person's well-being.
2. *Kinchitartasyarognut* - Treating the illnesses

The Action of memory-enhancing herbs

The formulation of *Medhya* drugs are two types¹³:-

1. *Sheeta Veerya* and *Madhura Vipaka*- it promotes *Kapha* and enhances “*Dharana karma*” (i.e. retention of cognition) e.g. *Yashtimadhu*, *Brahmi*, *Shankhpushpi*, etc.
2. *Ushna Veerya* and *Tikta Rasa*- it promotes *Pitta* and enhances *Grahana* and *Smarana* (i.e. grasping power and memory) e.g. *Guduchi*, *Vacha*, *Jyotishmati*, etc.

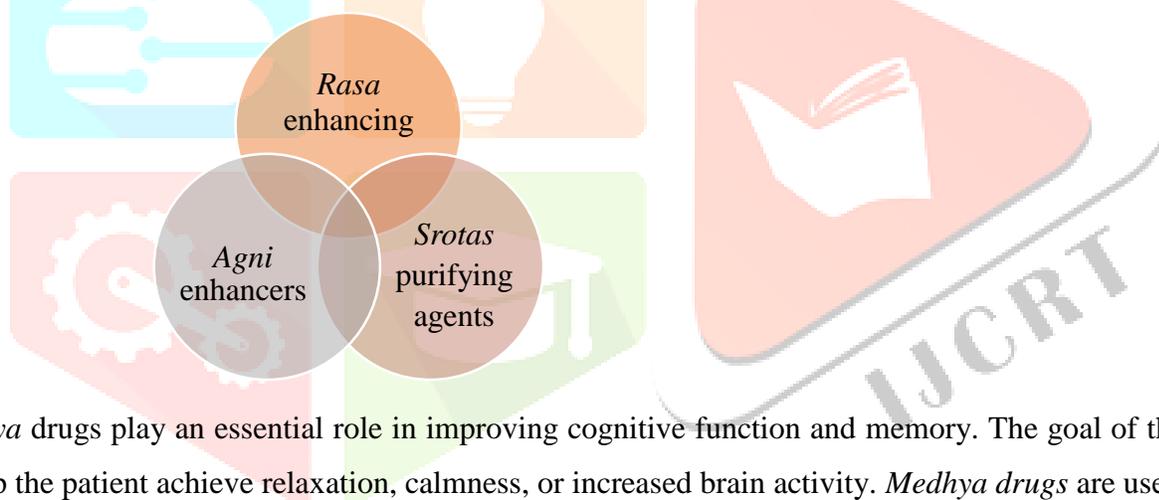
Medhya drugs act at different levels¹⁴-

Rasayana medications reduce illness and aging.

Ayurvedic *Rasayana* drugs are molecular nutrients and nutrition-enhancing substances that work through fundamental principles.

1. *Rasa* enhancing or direct nutrient effect.
2. *Agni* enhancers or promoters of digestion and metabolism.
3. *Srotas* purifying agents or promoters of microcirculation and tissue perfusion.

All three of these occurrences, either separately or in combination, increase the body's nutritional state and promote the formation of the best qualities of cells and tissues that are capable of resisting stress and aging.



Medhya drugs play an essential role in improving cognitive function and memory. The goal of this therapy is to help the patient achieve relaxation, calmness, or increased brain activity. *Medhya drugs* are used to improve mental abilities in people of all ages and to avoid mental illnesses. These drugs promote the Intellect (*Dhi*) Retention power (*Dhriti*), and memory (*Smriti*). The drugs known as *Medhya Rasayana* are recognized for their specific impact on mental function, as they rectify the imbalances caused by “*Rajas*” and “*Tamas*” and enhance the functions of “*Buddhi*” and “*Mana*.” The Ayurvedic concept of *Rasayana* has been correlated with cell renewal and tissue regeneration; particular *Rasayana* are known to nourish and stimulate their corresponding *Dhatu*s, or tissues. For example, *Medhya Rasayana* is used for the brain, *Hridya Rasayana* is for the heart, and *Chakshusya Rasayana* is for the eyes.

Mode of administration

- *Purva Karma*- Like all *Rasayana*, *Koshtha Shuddhi* before the administration is important.
- *Pradhana Karma*- *Medhya* medications are explained in their various forms such as *Svarasa* (juice), *Kalka* (paste), etc. In the same way, according to the particular *Yoga* (formulation), the dosage, duration, and adjuvant will also change. Ex. *Shveta Avalgujadi Rasayana* is taken with *Ushna Jala* (lukewarm water) for six months, while *Vacha Rasayana* is given with *Goksheera* for forty-eight days.
- *Pashchat Karma*- After the digestion of *Medhya Rasayana Pathyapathya* (do's and don'ts) should be followed. The *Pathya* (wholesome) specified for many of the formulations is *Shashtikashali* (a type of rice) with *Ghrita* (cow's ghee) and *Ksheera* (milk).

Time of administration

The best time to take *Medhya Rasayana* is early morning, before meals.¹⁵

Probable Mode of Action of *Medhya Dravya*

The *Medhya* effect of *Medhya Dravya* can be considered as *Prabhavajanya*¹⁶. *Prabhava Janya karma* (special action) i.e. action exerted due to the combination of *Panchamahabhoota* (five basic elements) in a way very unique to the specific *dravya* only and not seen in others with similar *Rasa* (taste), *Guna* (property), *Veerya* (potency) & *Vipaka* (end metabolism). This attribution is valid since *Medhya Dravya's* activity cannot be linked to a specific drug property. Any *Medhya* drug aims to maintain the regular functioning of *Sadhaka Pitta* and *Tarpaka Kapha*. *Medhya* drugs also influence the *Manasika bhavas*, or mental faculties, which reduce stress, anxiety, and other related issues.

Medhya Dravya

Table No.1 Properties of different *Medhya Dravya*

Drug	Rasa	Guna	Veerya	Vipaka
<i>Aindri</i>	<i>Tikta</i>	<i>Laghu</i>	<i>Ushna</i>	<i>Katu</i>
<i>Guduchi</i>	<i>Tikta, Kashaya</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>
<i>Jatamansi</i>	<i>Tikta, Kashaya, Madhura</i>	<i>Laghu, Snigdha</i>	<i>Sheeta</i>	<i>Katu</i>
<i>Jyotishmati</i>	<i>Katu, Tikta</i>	<i>Tikshna</i>	<i>Ushna</i>	<i>Katu</i>
<i>Kushmanda</i>	<i>Madhura</i>	<i>Laghu, Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>
<i>Mandukparni</i>	<i>Tikta, Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Sheeta</i>	<i>Madhura</i>
<i>Shankhpushpi</i>	<i>Kashaya, Tikta</i>	<i>Snigdha, Pichchila</i>	<i>Ushna</i>	<i>Madhura</i>
<i>Vacha</i>	<i>Katu, Tikta</i>	<i>Laghu, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>
<i>Yashtimadhu</i>	<i>Madhura</i>	<i>Guru, Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>

Table No. 2 The Botanical Name, Family, Part Used, and Dose of *Medhya Dravya*

Drug	Botanical name	Family	Part used	Form & Dose
<i>Mandukaparni</i>	<i>Centella asiatica</i> Lin.	Apiaceae	Whole plant	Swaras(juice) 10-20 ml
<i>Yashtimadhu</i>	<i>Glycyrrhiza glabra</i> Linn.	Fabaceae	Root	<i>Churna</i> (powder) 3-6 gm
<i>Guduchi</i>	<i>Tinospora cordifolia</i> Miers.	Menispermaceae	Stem	<i>Churna</i> (powder) 3-6 Gm
<i>Shankhpushpi</i>	<i>Convolvulus pluricaulis</i> Chois.	Convolvulaceae	Whole plant	<i>Kalka</i> (paste) 10-20 gm

Table No.3 Mode of action of different *Medhya Dravya*

Drugs	Mode of action
<i>Ashwagandha (Withania somnifera)</i>	Neuritic regeneration ¹⁷ , Mood stabilizer Anxiolytic – antidepressant activity ¹⁸
<i>Bramhi (Bacopa monnieri)</i>	Prevent oxidative damage of the brain ¹⁹ , Memory enhancement ²⁰
<i>Guduchi (Tinospora cordifolia)</i>	Antioxidant ²¹ , Anxiolytic ²²
<i>Jyothismati (Celastrus paniculatus)</i>	Cognitive ²³ , enhances recall of memory ²⁴
<i>Kushmandaghrita (Benincasa hispida)</i>	Increase immediate memory, Antidepressant ²⁵
<i>Mandukaparni (Centella asiatica)</i>	Oxidative defense ²⁶ , Treating mental retardation ²⁷ , enhance neuronal dendrites ²⁸
<i>Sankhapushpi (Convolvulus pluricaulis)</i>	Memory invigorator ²⁹ , Acetylcholinesterase Inhibitor ³⁰
<i>Vidanga (Embelia ribes)</i>	Neuroprotective effect, Antioxidant ³¹
<i>Yastimadhu (Glycyrrhiza glabra)</i>	Memory-strengthening ³² , Cognitive (enhances learning and memory) ³³

Discussion

All drugs or medicines that boost intellect power are called *Medhya Dravya*. Since *Medhya* is the *Prabhavajanya Karma*, it is difficult to explain the exact mode of action based on *Rasapanchaka*. Based on *Shareerika Dosha* and *Manasika Bhava*, such as *Tridosha* and *Satvadi Bhava*, respectively, such functions can be understood. *Vata Dosha*, important in coordinating other bodily functions, is essential for memory and learning. Maintaining the activity of other *Dosha*, such as *Pitta* and *Kapha*, requires stability and control over

the *Vata Dosha*. *Sadhaka Pitta* and *Tarpaka Kapha* are quite important to *Mastishka's* functions. Harmony of *Mano Karma*, such as *Dhee*, *Dhriti*, and *Smriti*, is maintained by the *Satva Guna* of *Mana*. *Mana's* functions are interfered with by *Mano dosha* such as *Tamas* and *Rajas*. Thus, it becomes important to maintain *Satvika Guna*. The *Shareerika* and *Manasika Dosha* may be influenced by medicinal plants used in *Medhya* activities. It is important to choose your medications carefully throughout treatment because the majority of them have either *Vatapittahara* or *Vatakaphahara* effects. *Medha* is included in *Pitta's Prakrit karma* since *Pitta* is an *Aashu* and *Tikshna*, which makes it beneficial in *Vishaya graham* and *Smriti*. *Vata* is also required for the association of concepts during the *smriti* process. Because *Dhriti (Dharan)* and stability are provided by *Kapha*, that's why *Sthirita* and *Dhriti* are a part of *Kapha's Prakrit Karma*. The *Ushna Veerya* and *Sheeta Veerya Dravya* should be *Medhya* for all of these reasons. But *Ushna Veerya Dravya* is mainly for *Vishaya Graham* and *Smriti* rather than *Sheeta Veerya* for *Dharan Shakti*. The above facts make it evident that both *Kaphaja* and *Pittaja Dravya* are *Medhya*. While *sheeta veerya dravya* primarily improves memory, *ushna veerya dravya* primarily promotes intellect. A well-functioning intellect, or *Buddhi*, is an indication of excellent *Tvak* (skin) and *Sattva sara* in any individual and is considered a characteristic of a *Pitta* and *Kapha Prakriti* (body constituent) person.

Conclusion

Although the brain's capacity to preserve memories is one of its most remarkable characteristics, memory loss can result from several factors, such as genetic, congenital, malnutrition, and others. According to Ayurveda, *Medhya Dravya* balances the *Tridosha* to achieve the goal of improving intellectual capacity. *Medhya Rasayana* functions at the *Rasa* level by enhancing *Agni's* function and encouraging *Rasa* circulation by clearing and opening the microchannel to enhance mental function. It also promotes *Rasa* circulation by opening and cleaning the microchannel. Nowadays, memory loss is a serious issue that impacts individuals all over the world, especially the young and the old. Therefore, to overcome cognitive deficiency diseases, medicinal plants must be investigated globally for their ability to improve cognitive function due to their less negative effects.

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