

Brahmi and Cognition: Nature's Brainpower Enhancer

By Wendy Weissner

Is learning and absorbing new information difficult for you? Do you ever feel that a fact or memory is on the tip of your tongue, but you cannot recall it? Do you find it challenging to remember driving directions or information you have just read?

Cognition is what helps people function in everyday life. It encompasses paying attention, concentrating, learning, strategizing, executing plans, comprehending language, self-expressing, as well as memory and recall. When it's not working, people find it challenging to pay attention, process information quickly, remember or recall information, respond to information, think critically, or solve problems. More and more people who want to increase their mental powers, including those with moderate to severe cognitive deficits, are turning toward natural products for help.

The Totality of Life: Brahmi

In the Ayurvedic tradition, Brahmi (*Bacopa monniera*) is one of the best-known herbals for improving learning, memory and recall. The herb's name comes from the Sanskrit term, *brahman*, which translates to "the totality of life." *Brahman* is the knowledge of the ultimate reality: that the entire expanse of life is nothing other than the play and display of our own inner awareness. The reference to *Brahma*, the lord of Creation in the Hindu myths, suggests that this herb represents the creative energy of this universe, with the ability to facilitate divine consciousness.

The herb is characterized by lightness, peace, and clarity and is therefore fine for most people to use. In Ayurveda, the heart is considered to be the seat of psycho-spiritual development. Brahmi increases the power of the mind and is also good for the heart. This herb is said to enhance the three basic components of the mind - power of learning, power of retention, and power of recall. Brahmi promotes each of these functions independently, and synergistically improves the interaction between these functions. Furthermore, Brahmi is capable of strengthening and fortifying the mind to withstand and manage the input of the senses, resulting in a balanced and blissful heart.

Ayurvedic healers consider Brahmi a very valuable herb for treating insanity, epilepsy, nervous exhaustion, and other mental disorders. Historically, Brahmi was used to improve memory, learning, and concentration and to recharge the mental faculties with specific benefit for students and intellectuals wishing to harness mental power. Brahmi serves its highest purpose when it balances and coordinates brain function such that the brain can fully reflect inner wisdom and light of consciousness, which contains true knowledge.

According to the *Sushruta Samhita*, Brahmi is best taken after cleansing the body with proper emetics and purgatives so that the the herb will work properly. Recognized as a brain tonic, after seven days of use, expansion of intellectual faculties begin to appear and the complexion is improved. After 14 days, old and forgotten memories are revived. Twenty-one days of supplementation "enables a man to reproduce from memory as many as one hundred words." Most strikingly, by 42 days, Brahmi "removes all inauspicious features whether of the body or of the mind... and all kinds of knowledge come rushing into... memory."

Does Brahmi Really Work?

As increasing numbers of individuals are using herbal remedies, there is concern in the conventional medical community about what herbs like Brahmi actually do. Most modern pharmaceuticals have large-scale clinical safety and efficacy trials behind them before they reach FDA approval. In such trial, optimal dosage is determined for maximum safety and effectiveness. Herbal remedies have been largely untested because they have been used for thousands of years, and practitioners have relied upon anecdotal evidence. Now, herbs are also being tested in the framework of clinical trials to assess their safety and efficacy.

Brahmi's use as a brain tonic and memory booster is supported by several clinical trials that found significant changes in cognitive tasks after 12 weeks of supplementation. In two clinical trials published in 2008, Calabrese and colleagues found improvements in short-term memory (Calabrese et al., 2008), and Stough and colleagues noted increases in working memory and reduction in error-making. One theory is that improvements in these individual cognitive processes (learning, memory or recall) ultimately lead to improved nerve impulse transmission, leading to faster learning and better mental power. This theory of Brahmi's enhancement is supported in part by animal research (Singh et al., 1982) showing that rats subjected to learning performance tests provided better acquisition, improved retention and shortened reaction time than controls. Furthermore, in 2001, Stough et al. reported significant improvement in speed of visual information processing, learning rate, memory consolidation and decreased forgetting rate in humans. In another 2010 human study by Morgan and colleagues, significant improvements were found in all three areas of verbal learning (learning rate and acquisition), memory acquisition, and memory retention (delayed recall).

Though the majority of clinical trials seem to show consistent improvements around 12 weeks of supplementation, some trials examined different time frames. Roodenrys et al. (2002) reported significant improvements in delayed recall six weeks *after* the 12 weeks of Brahmi supplementation ended. In another 12-week study investigating Brahmi, Raghav et al. (2006) reported significant improvements in mental control and memory as early as four weeks.

Dosing and Safety

Brahmi can be taken by itself or with other similar herbs, such as Gotu Kola, to improve memory and retention of information. Doses are most effective when taken regularly for several weeks rather than as one acute dose. The whole plant or leaves may be ingested, depending on the intended effect. Based on a review of six clinical trials, 300-450 mg of Brahmi per day, taken in single or divided doses for 12 weeks, is generally well tolerated. Stomach upset, nausea, abdominal cramps, increased stool frequency and diarrhea are the most commonly reported side effects, although these are infrequent and considered minor. KeenMind® is one example of a Brahmi product that contains a standardized amount of bacosides in each tablet; bacosides are triterpenoid saponins thought to be pharmacologically active. Made in Australia, KeenMind® has been found effective in clinical trials (Stough et al., 2008).

Historical and Current Evidence-Based Medicine Agree

Both historical information and recent clinical trials suggest that Brahmi is a useful herb for increasing cognitive function. In addition, it is relatively safe for use in healthy adults. However, there is some disagreement regarding how long it takes for Brahmi's effects to be noticed. There are several possibilities that might explain this phenomenon:

- 1) All of the studies analyzed in this report used generally healthy human adults, but the description of "healthy" is unclear and may be in disagreement from an Ayurvedic perspective.
- 2) Brahmi is considered a heavy tonic that may be difficult for some individuals to digest without proper digestive stimulants.
- 3) Most studies analyzed in this report used a standardized Brahmi formula, which means the percentage of a certain chemical constituent (*bacosides*) in the formula was made equal in all tablets. According to Ayurveda, when one plant chemical is isolated, or increased disproportionately, the formulation loses the balancing factors that exist in the remainder of the plant chemistry.

A Final Thought

Herbal medicine and natural products are becoming more prevalent in today's Western culture. Often, there is a tendency to review only historical, traditional information, which is often discounted by pragmatists as well as the

medical profession, or to rely on current, evidence-based clinical trials which often miss the wisdom of the past. Collective thought, or the average of all thoughts, is often more correct than any individual account. To honor both the historical information on Brahmi as well as current clinical “evidence-based” observations will bring us closer to the truth of its properties as well as its efficacy in today’s world.

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