



Bacosides Enriched Standardized Extract of Bacopa (BESEB)

A CDRI (CSIR) Product

Central Drug Research Institute (CDRI), Lucknow, a constituent laboratory of Council of Scientific & Industrial Research (CSIR), New Delhi, India has developed a unique single plant based natural memory enhancer formulation - **BESEB** ("Bacosides Enriched Standardized Extract of Bacopa") from the herb *Bacopa monniera*. The process for making enrichment of the active constituents (Bacosides A & B) in BESEB has been patented by CDRI (CSIR). The plant is commonly known as Brahmi which has been used in the Indian System of Ayurvedic Medicine as a traditional herb for over 3000 years to enhance memory and learning.

BESEB is successfully commercialized and its efficacy has been established by CDRI (CSIR), Lucknow. It has been licensed to M/s Lumen Marketing Co., Chennai for manufacturing and marketing. Lumen is selling the product under different brand names with its business associates mainly as **Memo Plus Gold** in **Malaysia, Philippines & Singapore**, **Keenmind & Membac** in **Australia & New Zealand** and **Memory Perfect** in **France & Germany**. Lumen and Zaar Distributors Pvt. Ltd., New Delhi joined hands for extensive marketing of the product in India as **Memory Sure**. It will soon be available in Thailand, Indonesia, SAARC countries, the UAE and CIS (former Soviet states).



Clinical trials in India & Australia using CDRI (CSIR) - BESEB:

- CDRI clinical trials on **Attention Deficit Hyperactivity Disorder (ADHD)** in children.
- CDRI clinical trials on **Age Associated Memory Impairment (AAMI)** in old age subjects.
- Swinburne University of Technology's Brain Sciences Institute (BSI), Australia through the National Institute of Complementary Medicine (NICM): Clinical trials on Healthy human volunteers published in international journal Psychopharmacology-2001.
- University of Wollongong, Australia: Clinical trials on Healthy human volunteers published in international forum Neuropsychopharmacology-2002.
- Australian Government funded initiative was established in 2007 to seek out scientifically valid evidence for alternative therapies, allowing them to become part of mainstream treatment, particularly for priority health issues such as the prevention and early treatment of Dementia.

Who can benefit from BESEB?

The results of the above clinical trials conducted by CDRI/CSIR in India and also in Australia prove that it is good for the prevention & early treatment of dementia.

- **For Attention Deficit Hyperactivity Disorder (ADHD) in Children**
- **For Age Associated Memory Impairment (AAMI) in elderly persons**
- **For those with stress, tension, anxiety and want to improve their memory**



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BESEB in the Eyes of the World

- The published study conducted by Nathan P. J. et. al. at the Brain Sciences Institute, Swinburne University, Australia entitled "Effects of a combined extract of *Ginkgo biloba* and *Bacopa monniera* on cognitive function in healthy humans (2004)" showed that a combined extract of *Ginkgo biloba* and *Bacopa monniera* had no memory enhancing effect on healthy humans. However, numerous published human and animal studies conducted in various institutions throughout the world on the effect of *Bacopa monniera* as a single stand-alone herb show positive effect on the cognitive function.
- Two internationally acclaimed Ayurvedic experts, namely Professor K. N. Udupa and Professor R. H. Singh, have scientifically established that *Centella asiatica* ('Indian Pennywort' or 'Gotu Kola' in English, 'Pegaga' in Bahasa Malaysia and 'Vallarai' in Tamil) has one-tenth of the cognitive enhancing effect of *Bacopa monniera*.

What is the safety profile of BESEB?

- BESEB is found to be safe under various studies conducted by CDRI (CSIR) in laboratory animals and double blind cross over clinical trial studies in children and elderly subjects.

How does BESEB work and what are its benefits?

- **Dr. Robert Furchgott, a Nobel Laureate** (1998) discovered that when **BESEB** is taken, it releases a small amount of nitric oxide which helps to reduce anxiety allowing focus and concentration and improves blood circulation in brain.
- Facilitates learning, improves consolidation of learned behavior
- Induces an increase in protein kinase activity, serotonin and lowers the epinephrine levels in the brain areas that contribute to facilitatory effect of BESEB on long-term and intermediate forms of memory.
- Enhances the cholinergic neurotransmitter system in brain.
- Reduces anxiety in adults and children that enhances focus and concentration in logical memory, digit forward and paired associated learning.
- Possesses adaptogenic effect to combat day-to-day stress and improves mental alertness and sharpens short-term and long-term memory.
- Has potent antioxidant activity.

How and why does the CDRI Brahmi extract BESEB differ from other Brahmi extracts?

- Each capsule of **BESEB** contains a **standardized and an optimum quantity of the enriched Bacosides A and B** extracted from the plant *Bacopa monniera* as per CDRI(CSIR) quality control parameters. These bacosides are extracted based on a unique process know-how, developed and patented by the CDRI(CSIR).

What is Attention Deficit Hyperactivity Disorder (ADHD) in Children?

- Children with ADHD are less efficient learners. They learn the same number of words as normal but later on are weak in recalling the words.
- **Attention deficiency, hyperactivity, and impulsivity** are the key behaviors of ADHD.
- It is normal for all children to be inattentive, hyperactive, or impulsive sometimes, but for children with ADHD, these behaviors are more severe and occur more often. To be diagnosed with ADHD, a child must have symptoms for 6 or more months and to a degree that is greater than other children of the same age.



Symptoms of Attention Deficiency:

- Be easily distracted, miss details, forget things, and frequently switch from one activity to another
- Have difficulty in focusing on one thing
- Become bored with a task after a short time.
- Have difficulty in focusing attention on organizing and completing a task or learning new thing
- Have trouble in completing or turning in homework assignments, often losing things (e.g., pencils, toys, assignments) needed to complete tasks or activities
- Daydream and get easily confused
- Have difficulty in processing information as quickly and accurately as others
- Struggle to follow instructions.

Symptoms of Hyperactivity:

- Fidget and squirm in their seats
- Talk nonstop
- Dash around, touching or playing with anything and everything in sight
- Have trouble in sitting still during dinner, school, and story time
- Be constantly in motion
- Have difficulty in doing quiet tasks or activities.

Symptoms of Impulsivity:

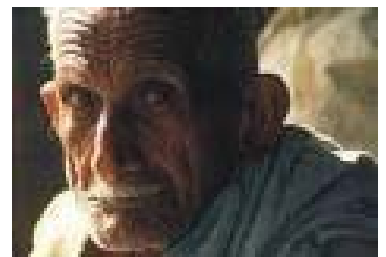
- Be very impatient
- Blurt out inappropriate comments, show their emotions without restraint, and act without regard for consequences
- Have difficulty in waiting for things they want or waiting their turns in games
- Often interrupt conversations or others' activities.

What is Age Associated Memory Impairment (AAMI) in elderly persons?

- AAMI is a common condition characterized by very mild symptoms of cognitive decline that occur as part of the normal aging brain process and not a specific neurological disorder. Like every other organ the aging brain also does not function as well as it used to.

Symptoms of AAMI:

- A general slowness in processing, storing and recalling new information,
- A general decline in the ability to perform tasks related to cognitive functioning (such as, memory, concentration, and organizing activities).
- Difficulties remembering names and words.



The clinical study on AAMI patients by CDRI showed that memory improves and level of anxiety drops.

Recommended Dosage:

- Each capsule contains **BESEB** – 150 mg and with dicalcium phosphate (excipient) -250 mg
- For adults one capsule twice daily after food
- For children (7 to 12 years old) one capsule once a day after breakfast.
- It is advisable to continue taking **BESEB** for at least 3 months for a significant effect, thereafter maintaining one capsule daily as long as the person wishes to.

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