

Magtein®

BRAIN HEALTH

6 Functional Categories



Mood
Calm
Sleep
Memory
Focus
Brain Energy
Energy

In the United States, nearly one out of every four adults over the age of 70 has cognitive impairment and over one out of ten of those individuals progress to dementia every year. Nearly 47 million Americans have preclinical Alzheimer's disease with over 6 million Americans diagnosed with Alzheimer's disease. This is projected to increase to 15 million by 2060.

A primary cause of cognitive decline is synapse loss, or the connections between the neurons in the brain. Synapses help to code our memory and allow neurons to communicate with each other. The loss in synapses leads to memory loss and cognitive impairment. A reduction in magnesium levels in the brain may play a leading role in this loss of synapses. In fact, patients with Alzheimer's disease have been found to have low levels of magnesium in the brain.

A unique magnesium supplement called Magtein® (magnesium L-threonate) has been shown to increase brain levels of magnesium and functional neuronal terminals compared to other magnesium supplements including magnesium citrate, gluconate, malate and glycinate in animal studies. Furthermore, Magtein® also has been shown to prevent synaptic loss and reverse cognitive deficits in Alzheimer's disease animal models. In patients with cognitive impairment, Magtein® was shown to significantly improve overall cognitive ability and reverse the equivalent of 9 years of brain aging. Magtein® has also been shown to improve the MMSE score in patients with mild to moderate probable Alzheimer's disease.

Thus, Magtein® is a unique "brain boosting" magnesium supplement that has been shown to improve memory and cognition in those with cognitive impairment.

formula

Magtein® MOOD BOOST

Millions of Americans suffer with mental disorders or complain of having an “altered mood”. In many instances, these alterations in mood can be contributed to reductions in the amount of serotonin in the brain. Serotonin is an important neurotransmitter that supports feelings of happiness and a lack of serotonin in the brain has been suspected to be a leading cause of altered mood.

Magtein® is a unique magnesium supplement that has been shown to increase brain magnesium levels, which is required for the production of serotonin in the brain.

5-hydroxytryptophan (5-HTP) provides the substrate for serotonin further increasing serotonin levels in the brain. Hence, combining both Magtein® and 5-HTP is the perfect “serotonin boost” to help support a healthy mood.

formulas at a glance

Target population: Patients with altered mood



Dose:
1-2 grams

Mechanism of Action:
Increases magnesium in the brain which is needed to form serotonin in the brain.



5-HTP

Dose:
100-300 mg

Mechanism of Action:
The natural precursor to serotonin in the brain

Why it Works:
Increases serotonin levels in the brain.

Mood Formula 1 Magtein + 5-HTP

➔ Description

- Magtein® is a patented magnesium L-threonate supplement that is able to increase brain magnesium levels. It is known as the “brain magnesium”.
- 5-HTP, or 5-hydroxytryptophan, is an amino acid and a precursor to serotonin in the brain.

➔ Mechanism of Action

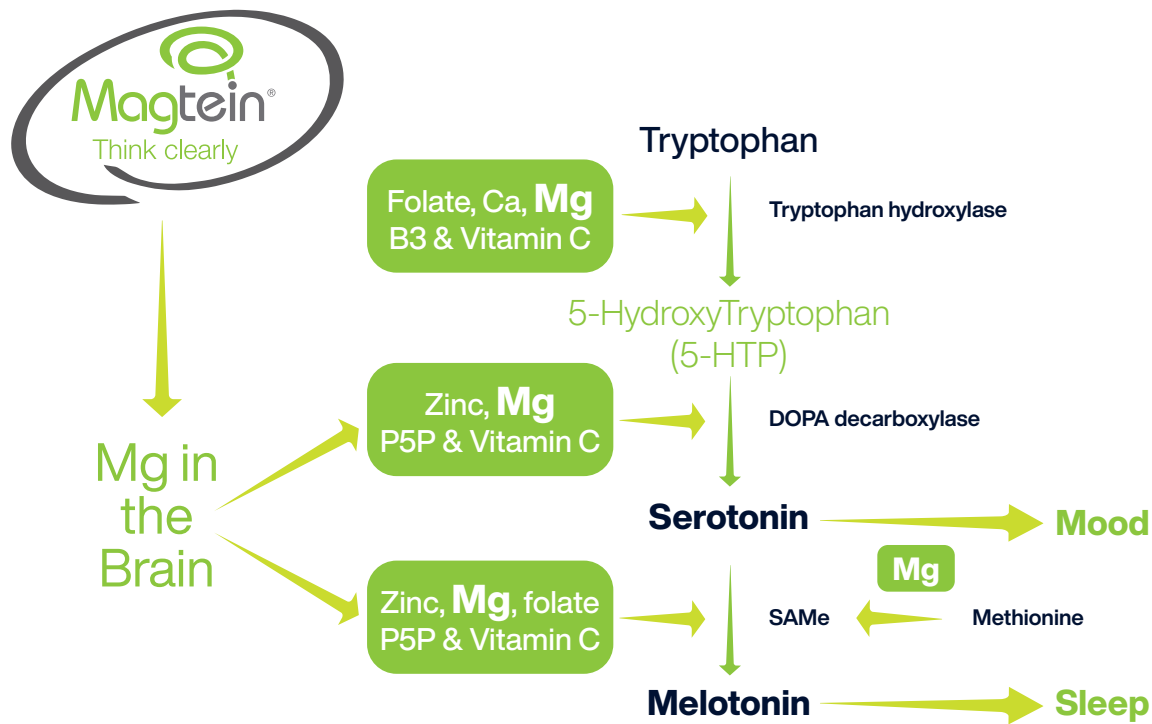
Magtein® increases brain magnesium levels, which helps increase the formation of serotonin and also increases neuronal synaptic function, density and plasticity via increasing NR2B subunits on NMDA receptors. Magnesium in the brain also helps oppose calcium-stimulated hyperexcitability in the brain.

5-HTP is a precursor to serotonin and needs magnesium in the brain to be converted into serotonin in the brain.

Serotonin is a ‘feel good’ neurotransmitter in the brain. Medications that treat depression many times work by blocking serotonin re-uptake and thus artificially elevating brain serotonin levels.

Magtein® + 5-HTP naturally increases the precursor to serotonin (5-HTP) and magnesium in the brain (Magtein®), which is needed to convert 5-HTP to serotonin.

Magtein® + 5-HTP = SEROTONIN SYNERGY



Dose:

Magtein 1-2 grams.
5-HTP 200 mg.

Safety:

Very good safety data, may cause mild gastrointestinal upset.

Benefit:

Increases serotonin levels in the brain.

Claims:

Supports mood.

Supports normal brain function.

Supports healthy serotonin levels.

Clinicals

- Two human clinical studies showed that 5-HTP is better than placebo at alleviating depression, the number needed to treat was 2.78.¹
- A meta-analysis of 7 human clinicals concluded, "...large positive effects of using oral 5-HTP supplementation to treat depression...most reported high remission rates... the effect size for change in symptom severity was large, with a mean drop in Hamilton Rating Scale for Depression scores of 12.7 points."²
 - A difference of 12 points is consistent with a decline in score from severe depression to a healthy range. Better remission rates were observed with longer treatment duration.
- 5-HTP has been shown to be equally effective as the antidepressant fluoxetine (Prozac®).³
 - The benefits take approximately two weeks to start, although other studies have shown quicker effects. The study started out with 5-HTP at 150 mg (in 3 divided doses) per day and increased to 300 mg/day (in 3 divided doses) after two weeks with many patients improving at this dose and then increased to 400 mg/day after the 4th week.
- 5-HTP from 50-300 mg/day significantly improved depression in 69% of patients with no side effects reported.³

formula Magtein® CALM

Millions of Americans complain of having feelings of stress or anxiety. States of stress can lead to an increase of magnesium loss out the body. Furthermore, magnesium deficiency can worsen stressful events. Thus, there is a vicious cycle, whereby stress can cause magnesium depletion and magnesium depletion worsens stressful events.

Additional ingredients that work synergistically with Magtein® for supporting calmness include:

Magtein® is a unique supplement capable of increasing brain magnesium levels. This helps to support healthy neurotransmitter levels in the brain supporting a healthy state of mind.

Ocibest® works synergistically with Magtein® as it helps to raise the calming neurotransmitter gamma-aminobutyric acid (GABA) and lower cortisol levels, whereas Magtein® helps to support serotonin, dopamine and norepinephrine levels in the brain. This is the perfect combination for supporting a healthy calm mind.

L-theanine helps to promote relaxation by increasing alpha-waves in the brain and stimulating GABA receptors.

Ashwagandha supports GABA levels and lowers cortisol levels. Ashwagandha reduces oxidative stress in the brain.

Rhodiola helps to increase neurotransmitter levels in the brain and lowers cortisol levels.

formulas at a glance

Target population: Individuals who experience stress throughout their day.



Dose:
1-2 grams

Mechanism of Action:
Helps provide magnesium to the brain which is depleted in stressful situations.



OciBest®

Dose:
1.2 grams

Mechanism of Action:
Increases the calming neurotransmitter GABA and lowers the stress hormone cortisol

Why it Works:
Increases neurotransmitters and GABA levels in the brain. Lowers cortisol levels.

L-theanine

Dose:
200 mg

Mechanism of Action:
Promotes relaxation by increasing alpha-waves in the brain and stimulates GABA receptors

Why it Works:
Increases alpha waves in the brain and stimulates GABA receptors.

Ashwagandha

Dose:
125 mg

Mechanism of Action:
Supports GABA and lowers cortisol. Supports the brain against oxidative stress.

Why it Works:
Supports GABA and lowers cortisol. Supports the brain against oxidative stress.

Rhodiola

Dose:
200 mg twice daily

Mechanism of Action:
Increases neurotransmitter levels in the brain and lowers cortisol levels.

Why it Works:
Increases neurotransmitter levels in the brain and lowers cortisol levels.

Calming Formula 1 Magtein® + Ocibest®

➔ Description

- Magtein® is a brain bioavailable magnesium.
- Ocibest®, or Ocimum sanctum, is commonly known as Holy Basil or Tulsi. It is a traditional Ayurvedic herb native to India.

➔ Mechanism of Action

Magtein® Magnesium can bind and stimulate GABA receptors⁴. GABA is an inhibitory neurotransmitter that helps with relaxation.

Magnesium reduces the release of adrenocorticotrophic hormone (ACTH) and lowers cortisol release.⁵

Ocibest® Contains numerous phytochemicals such as eugenol, ursolic acid, rosmarinic acid, apigenin, luteolin, B-sitosterol and carnolic acid.

Helps with stress-induced depressed mood

Inhibits cortisol release

O. sanctum and its major phytoconstituent ursolic acid, inhibited corticotropin releasing hormone receptor 1 in the pituitary, which is what causes the release of cortisol by the adrenals

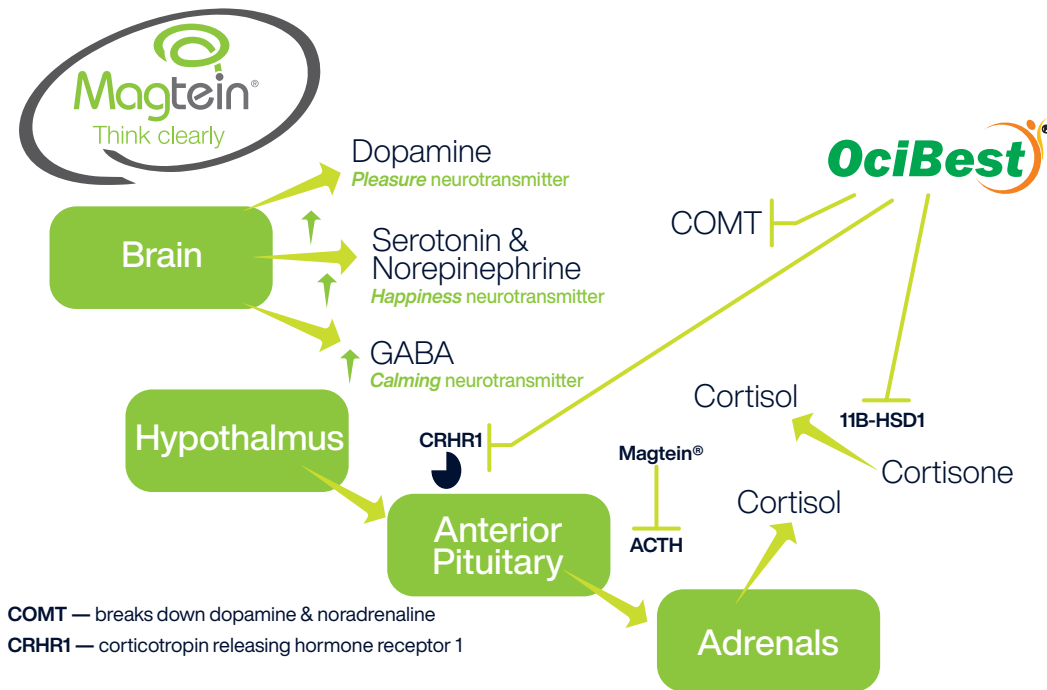
Inhibits activation of cortisone to cortisol

Ocimum sanctum also inhibits 11B-hydroxysteroid dehydrogenase type 1, which is what converts inactive cortisone to active cortisol. Excess activation of 11B-HSD1 can lead to Cushing's syndrome, visceral adiposity, insulin resistance, depression, hypertension, heart disease and more.

Reduces cortisol release during stressful events

Chronic stress depletes dopamine and norepinephrine levels. Ocimum sanctum has COMT inhibitory activity, which increases dopamine and noradrenaline levels.

Magtein® + Ocibest® = SYNERGISTIC ANTI-ANXIETY PROPERTIES



Dose:

Magtein 1-2 grams.

Ocibest 1,200 mg.

Safety:

No adverse events reported in the human clinical. May lower blood pressure.

Benefit:

Increases neurotransmitters and GABA levels in the brain. Lowers cortisol levels.

Claims:

Supports stress.

Supports normal brain function.

Supports healthy neurotransmitter levels.

Supports healthy cortisol levels.

Clinicals

Animals — Clinical studies that subject rats to chronic variable stress, show that Ocibest® reduces immobility time, indicating effectiveness against stress-induced depression.

Human studies

1. Population: Ages 18-65 years suffering from at least 3 symptoms of stress.⁶

- Ocibest® 1,200 mg of actives per day: After six weeks of intervention, scores of symptoms such as forgetfulness, sexual problems of recent origin, frequent feeling of exhaustion, and frequent sleep problems of recent origin decreased significantly.
- Helps manage the following stress symptoms
 - Forgetfulness
 - Frequent feeling of exhaustion
 - Frequent sleep problems

2. Population: Young overweight and obese subjects⁷

- 250 mg of Tulsi extract twice daily on an empty stomach for 8 weeks
- Significantly improved triglycerides, LDL, HDL, VLDL, BMI, insulin and insulin resistance
- Reduces mRNA levels of hepatic lipogenesis genes, such as sterol regulatory element binding protein1c (SREB1c) and fatty acid synthase (FAS) and stimulates fat breakdown, by activating lecithin cholesterol acyl transferase (LCAT) and hepatic lipoprotein lipase, protects pancreatic islet cells from free radical damage and improves the antioxidant status. The tetracyclic triterpenoid from the aerial part of *O. sanctum* may be responsible for its improvements in metabolic parameters.
- Does not elevate liver enzymes in numerous human clinical studies showing its safety

Calming Formula 2 Magtein® + L-theanine



Description

- + Magtein® is a brain bioavailable magnesium.
- + L-theanine is a non-protein amino acid found in both green and black tea.



Mechanism of Action

Magtein® Magnesium can bind and stimulate GABA receptors ⁴. GABA is an inhibitory neurotransmitter that helps with relaxation.

Magnesium reduces the release of adrenocorticotrophic hormone (ACTH) and lowers cortisol release.⁵

L-theanine Promotes relaxation without drowsiness by increasing alpha waves in the brain. It crosses the blood brain barrier within 30 minutes after consumption directly impacting the brain.

An increase in the activity of alpha-bands also appears important for suppressing distracting visual information during demanding tasks. Thus, L-theanine may also help with focus.

Dose:

Magtein 1-2 grams.

L-theanine 200 mg or 0.2 g.

Safety:

No safety issues reported in the clinicals.

Benefit:

Increases alpha waves in the brain and stimulates GABA receptors.

Claims:

Supports stress.

Relaxes the mind.

Helps with focus.

Clinicals

A systematic review of 9 randomized controlled trials in humans concluded,

- “Our findings suggest that supplementation of 200-400 mg/day of L-theanine may assist in the reduction of stress and anxiety in people exposed to stressful conditions.”⁹

Calming Formula 3 Magtein® + Ashwagandha

➔ Description

- ✦ Magtein® is a brain bioavailable magnesium.
- ✦ Ashwagandha is known as withania somnifera. It is an Ayurvedic adaptogenic herb that has been used in India for centuries.

➔ Mechanism of Action

Magtein® Magnesium can bind and stimulate GABA receptors ⁴. GABA is an inhibitory neurotransmitter that helps with relaxation.

Magnesium reduces the release of adrenocorticotrophic hormone (ACTH) and lowers cortisol release.⁵

Ashwagandha Anti-inflammatory, analgesic in osteoarthritis, anti-tumor, antioxidant, immunomodulatory, hemopoietic and rejuvenating properties¹⁰

Adaptogen that stabilizes the body's response to stress

GABA-mimetic, decreases cortisol release, decreases reactive oxygen species generation and lipid peroxidation, increases antioxidant enzymes (SOD, CAT), improves luteinizing hormone and follicle stimulating hormone release and testosterone levels improving male fertility.¹¹

Dose:

Magtein 1-2 grams.
Ashwagandha 125 mg.

Safety:

Good safety profile.¹²

Benefit:

Supports GABA and lowers cortisol. Supports the brain against oxidative stress.

Claims:

Supports stress.
Relaxes the mind.
Supports a healthy brain.

Clinicals

A systematic review of five human randomized controlled trials found that all five studies showed greater improvements with ashwagandha versus placebo in outcomes on anxiety or stress scales.¹²

Calming Formula 4 Magtein® + Rhodiola



Description:

- ✦ Magtein® is a brain bioavailable magnesium.
- ✦ Rhodiola is an adaptogenic shrub that has been used in traditional medicine to alleviate anxiety, stress, fatigue and depressed mood for centuries.



Mechanism of Action:

Magtein® Magnesium can bind and stimulate GABA receptors ⁴. GABA is an inhibitory neurotransmitter that helps with relaxation.

Magnesium reduces the release of adrenocorticotrophic hormone (ACTH) and lowers cortisol release.⁵

Rhodiola contains more than 140 active ingredients, the two most potent being rosavin and salidroside. It is an adaptogen that is thought to make the body more resilient to stressful events.

Centrally and peripherally affecting monoamine and opioid synthesis, transport and receptor activity and antioxidant potential

Inhibits monoamine oxidase B (MAO-B) increasing noradrenaline and serotonin which are "Feel good" neurotransmitters.¹³

Dose:

Magtein 1-2 grams.

Rhodiola 200 mg twice daily.

Safety:

Should not take with antidepressants.

Rhodiola has an adequate safety and tolerability profile, with a positive benefit-risk¹⁴ ratio

Low incidence of adverse events¹⁵.

Benefit:

Increases neurotransmitter levels in the brain and lowers cortisol levels.

Claims:

Supports stress.

Supports mood.

Relaxes the mind.

Clinicals

1. Rhodiola 200 mg twice daily

- Significantly reduces self-reported, anxiety, stress, anger, confusion and depression at 14 days and a significant improvements in total mood.¹⁴

2. Rhodiola 200 mg twice daily (before breakfast and before lunch) in 118 patients with a history of burnout showed clear improvements after just 1 week of treatment with continued improvements to the end of the study.¹⁵

3. Rhodiola 200 mg twice daily in 101 subjects with life-stress symptoms improved stress symptoms, disability, functional

impairment and overall therapeutic effect. Improvements were observed even after 3 days of treatment, as were continuing improvements after 1 and 4 weeks.¹⁶

- Rhodiola was safe and generally well tolerated. Adverse events were mostly of mild intensity and no serious adverse events were reported. Rhodiola extract at a dose of 200 mg twice daily for 4 weeks is safe and effective in improving life-stress symptoms to a clinically relevant degree.

formula Magtein® SLEEP

Millions of Americans suffer from sleep disorders. The most typical complaints include difficulty falling asleep, staying asleep and not feeling refreshed in the morning. Sleep is not only important for our overall health but also for our immune health.

Magtein® helps to promote good sleep by supporting the enzymes needed to synthesize melatonin in the brain. By combining Magtein® with melatonin you synergistically improve melatonin levels. Other ingredients that can be combined with Magtein® besides melatonin include 5-HTP and GABA.

Magtein® is a brain bioavailable magnesium.

Melatonin is a sleep hormone secreted by the pineal gland at night.

5-HTP, or 5-hydroxytryptophan, is an amino acid and a precursor to serotonin and melatonin in the brain

GABA – gamma amino butyric acid is a calming neurotransmitter and naturally occurring amino acid in the brain

formulas at a glance

Target population: People who have difficulty falling or remaining asleep.



Dose:
1-2 grams

Mechanism of Action:
Supports the enzymes in the brain needed to make melatonin.



Melatonin

Dose:
1-5 grams

Mechanism of Action:
Melatonin helps us fall asleep at night

Why it Works:
Increases melatonin levels in the brain and stimulates GABA receptors.

5-HTP

Dose:
50-100 mg

Mechanism of Action:
5-HTP is the precursor to serotonin, which is the precursor to melatonin in the brain

Why it Works:
Increases melatonin levels in the brain and stimulates GABA receptors.

+/-

GABA

Dose:
50-100 mg

Mechanism of Action:
GABA is a calming and relaxing neurotransmitter in the brain

Why it Works:
Increases melatonin levels in the brain and stimulates GABA receptors.

Sleep Formula 1 Magtein® + Melatonin

➔ Description

- ➕ Magtein® is a brain bioavailable magnesium that helps to increase the synthesis of brain melatonin levels and stimulates GABA receptors for a relaxing effect.
- ➕ Melatonin is a sleep hormone secreted by the pineal gland at night.

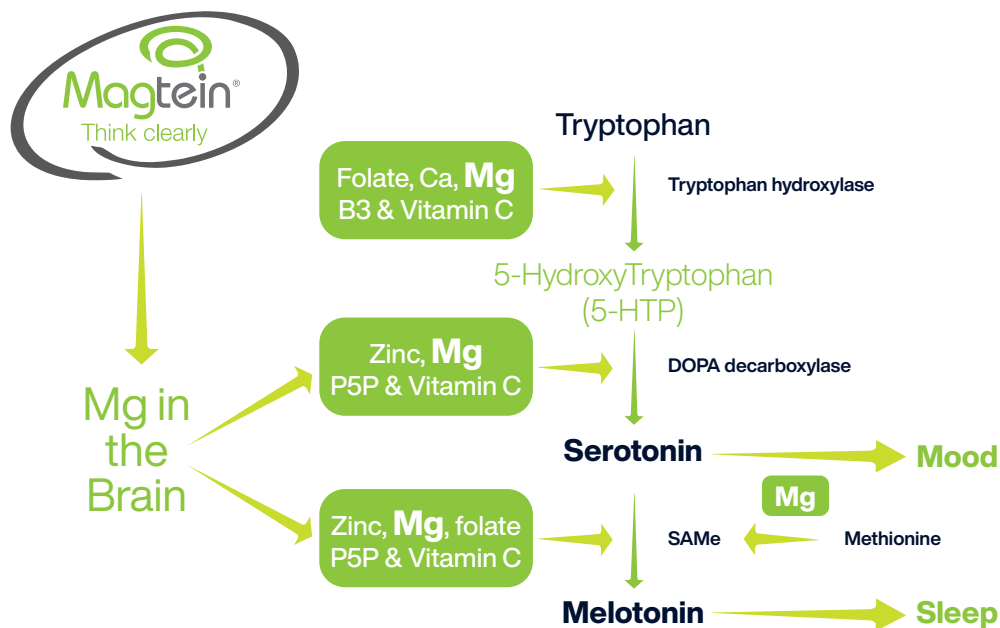
➔ Mechanism of Action

Magtein® increases brain magnesium levels which are required to synthesize melatonin in the brain. Magnesium can bind and stimulate GABA receptors.⁴ GABA is an inhibitory neurotransmitter that helps with relaxation.

Magnesium reduces the release of adrenocorticotrophic hormone (ACTH) and lowers cortisol release.⁵

Melatonin is a hormone secreted at night that helps with sleep.

Magtein® + Melatonin = SYNERGY



Dose:

Magtein 1-2 grams.
Melatonin 1-5 mg.

Safety:

Melatonin has been shown to be safe for at least 3 months¹⁸.

Benefit:

Increases melatonin levels in the brain and stimulates GABA receptors.

Claims:

Supports sleep.
Relaxes the mind.

Clinicals

Melatonin

1. A systematic review and meta-analysis of nineteen studies in 1,683 patients¹⁷
 - a. Melatonin demonstrated significant efficacy in reducing sleep latency and increasing total sleep time.
 - b. Trials with longer duration and using higher doses of melatonin demonstrated greater effects on decreasing sleep latency and increasing total sleep time.
 - c. Overall sleep quality was significantly improved in subjects taking melatonin compared to placebo.

Sleep Formula 2 Magtein® + 5-HTP (+/-) GABA

➔ Description

- Magtein® is a brain bioavailable magnesium that helps to increase the synthesis of brain melatonin levels and stimulates GABA receptors for a relaxing effect.
- 5-HTP, or 5-hydroxytryptophan, is an amino acid and a precursor to serotonin and melatonin in the brain.
- GABA – gamma amino butyric acid is a calming neurotransmitter and naturally occurring amino acid in the brain

➔ Mechanism of Action

Magtein® increases brain magnesium levels which are required to synthesize melatonin in the brain.

Magnesium can bind and stimulate GABA receptors.⁴ GABA is an inhibitory neurotransmitter that helps with relaxation.

Magnesium reduces the release of adrenocorticotrophic hormone (ACTH) and lowers cortisol release.⁵

5-HTP is a precursor to serotonin/melatonin and needs magnesium in the brain to be converted into serotonin/melatonin in the brain.

Magtein® + 5-HTP naturally increases the precursor to melatonin (serotonin)

GABA is a calming neurotransmitter in the brain

Dose:

Magtein 1-2 grams.
5-HTP 50 mg/day.
GABA 50 mg/day.

Safety:

No adverse events reported in the trial.

Benefit:

Increases melatonin levels in the brain and stimulates GABA receptors.

Claims:

Supports sleep.
Relaxes the mind.

Clinicals

1. An amino acid preparation containing 5-HTP + GABA in randomized, double-blind, placebo-controlled trial in ¹⁸ patients with sleep disorders
 - a. Reduced time to fall asleep, decreased sleep latency, increased the duration of sleep, and improved quality of sleep.¹⁹

formula Magtein[®] MEMORY

In the United States, nearly one out of every four adults over the age of 70 has cognitive impairment and over one out of ten of those individuals progress to dementia every year. Nearly 47 million Americans have preclinical Alzheimer's disease with over 6 million Americans diagnosed with Alzheimer's disease. This is projected to increase to 15 million by 2060.

A primary cause of cognitive decline is synapse loss, or the connections between the neurons in the brain. Synapses help to code our memory and allow neurons to communicate with each other. The loss in synapses leads to memory loss and cognitive impairment. A reduction in magnesium levels in the brain may play a leading role in this loss of synapses. In fact, patients with Alzheimer's disease have been found to have low levels of magnesium in the brain.

A unique magnesium supplement called Magtein[®] (magnesium L-threonate) has been shown to increase brain levels of magnesium and functional neuronal terminals compared to other magnesium supplements including magnesium citrate, gluconate, malate and glycinate in animal studies. Furthermore, Magtein[®] also has been shown to prevent synaptic loss and reverse cognitive deficits in Alzheimer's disease animal models. In patients with cognitive impairment, Magtein[®] was shown to significantly improve overall cognitive ability and reverse the equivalent of 9 years of brain aging. Magtein[®] has also been shown to improve the MMSE score in patients with mild to moderate probable Alzheimer's disease.

Magtein[®] is a unique "brain boosting" magnesium supplement that has been shown to improve memory and cognition in those with cognitive impairment.

Ashwagandha reduces oxidative stress in the brain.

Alpha-GPC Increases neuronal membrane fluidity.

formulas at a glance

Target population: Older adults with memory impairment.



Dose:
1-2 grams

Mechanism of Action:
Increases brain magnesium, synapses, synaptic function and synaptic plasticity.



Ashwagandha

Dose:
300 mg twice daily

Mechanism of Action:
Supports GABA and lowers cortisol.
Supports the brain against oxidative stress.

Why it Works:
Increases brain magnesium levels.
Supports GABA and lowers cortisol.
Supports the brain against oxidative stress.

Alpha-GPC

Dose:
400 mg three times daily or
800 mg morning 400 mg evening

Mechanism of Action:
Increases the synthesis and release
of acetylcholine in the brain.
Increases neuronal membrane fluidity.

Why it Works:
Increases the synthesis and release
of acetylcholine in the brain.
Increases neuronal membrane
fluidity.

Memory Formula 1 Magtein® + Ashwagandha



Description

- + Magtein® is a brain bioavailable magnesium.
- + Ashwagandha is known as withania somnifera. It is an Ayurvedic adaptogenic herb that has been used in India for centuries



Mechanism of Action

Magtein® Magtein increases brain magnesium levels, which increases neuronal synaptic density, function and plasticity. Magtein® has been shown to improve memory and cognition in those with mild cognitive impairment.²⁰

Ashwagandha Neuroprotective, neuroregenerator and may regenerate neurites.²¹

Dose:

Magtein 1-2 grams.

Ashwagandha 300 mg twice daily

Safety:

Good safety profile.¹²

Benefit:

Increases brain magnesium levels. Supports GABA and lowers cortisol. Supports the brain against oxidative stress.

Claims:

Supports a healthy brain.

Supports memory.

Supports sleep.

Relaxes the mind.

Clinicals

1. A systematic review of randomized, double-blind, placebo-controlled trials found that ashwagandha improved performance on cognitive tasks, executive function, attention, and reaction time. It also appears to be well tolerated, with good adherence and minimal side effects.²²
2. Randomized double-blind placebo-controlled study in 50 adults testing ashwagandha 300 mg twice daily or placebo in those with mild cognitive impairment.²³
 - a. After eight weeks of study, the ashwagandha treatment group demonstrated significant improvements compared with the placebo group in both immediate and general memory, verbal paired associates, faces, family pictures, logical memory.
 - b. The treatment group also demonstrated significantly reater improvement in executive function, sustained attention, and information-processing speed
 - c. Conclusions: Ashwagandha may be effective in enhancing both immediate and general memory in people with mild cognitive impairment as well as improving executive function, attention, and information processing speed.

Memory Formula 2 Magtein® + Alpha-GPC

➔ Description

- ✦ Magtein® is a brain bioavailable magnesium called magnesium L-threonate.
- ✦ Alpha-GPC or alpha-glycerophosphocholine, used to be known as **choline alfoscerate**, is a choline containing supplement.

➔ Mechanism of Action

Magtein® Magtein increases brain magnesium levels, which increases neuronal synaptic density, function and plasticity. Magtein® has been shown to improve memory and cognition in those with mild cognitive impairment.²⁰

Alpha-GPC Increases the synthesis and release of the neurotransmitter acetylcholine in the brain (hippocampus, frontal cortex and striatum) which helps with memory.

An older name for alpha-GPC was choline alfoscerate.

Increases neuronal membrane fluidity.

Alpha-GPC was compared with CDP-choline in 2 multicenter, randomized, controlled studies among patients with multi-infarct dementia. Both investigations showed significant improvements in most neuropsychological and behavioral instruments in the alpha-GPC recipients compared with CDP-choline recipients; both drugs were well tolerated.²⁴

Dose:

Magtein 1-2 grams.

Alpha-GPC 1,200 mg/day.

Safety:

No safety concerns.

Benefit:

Increases the synthesis and release of acetylcholine in the brain. Increases neuronal membrane fluidity.

Claims:

Supports memory.

Supports learning.

Supports healthy neuron.

Clinicals

1. Alpha-GPC (choline alfoscerate) at 400 mg three times daily
 - a. Supplementation of Alpha-GPC at 400mg three times daily (1,200mg daily) for 180 days in persons with mild to moderate Alzheimer's disease was able to improve symptoms as assessed by a multitude of rating scales including ADAS, MMSE, CDI, and GDS.²⁵
2. Alpha-GPC 800 mg in morning and 400 mg at 4PM in probable Alzheimer's disease with clinical onset after 65 years of age (senile dementia of Alzheimer's type).
 - a. Significantly improved MMSE scores, verbal memory (as assessed by Rey's 15-word test), immediate and delayed recall scores, intellectual and emotional impairments, 'affective disorders', 'apathy', 'somatic functioning', as well as the item 'overall impression'.²⁴

formula Magtein® FOCUS

Millions of Americans suffer from a lack of focus or concentration. This can impair work or school productivity and can also lead to behavioral issues. Maintaining focus throughout the day is important. Having good concentration and focus is also necessary for anyone who performs any type of mentally challenging activity.

Magtein® is a unique brain-boosting magnesium supplement that helps to strengthen the synapses in the brain, which may help to improve focus and concentration. Other ingredients that work synergistically with Magtein® to support focus include:

Bacomind® increases antioxidant enzymes in the brain and reduces the breakdown of acetylcholine in the brain.

Alpha-GPC increases the synthesis and release of the neurotransmitter acetylcholine in the brain (hippocampus, frontal cortex and striatum) which helps with memory.

L-theanine increases alpha-waves in the brain and stimulating GABA receptors.

formulas at a glance

Target population: Young health professional, adults with difficulty concentrating, college students



Dose:
1-2 grams

Mechanism of Action:
Magtein® increases brain magnesium levels and helps to support focus by increasing synapses in the brain.



Bacomind®

Dose:
300-450 mg

Mechanism of Action:
Increases antioxidant enzymes in the brain and reduces the breakdown of acetylcholine in the brain.

Why it Works:
Increases antioxidant enzymes in the brain, protects brain from oxidative stress, may reduce breakdown of acetylcholine, may lower amyloid-beta proteins in the brain and has neuroprotectant properties. Improves ADHD symptoms.

Alpha-GPC

Dose:
400 mg three times daily or 800 mg morning 400 mg evening

Mechanism of Action:
Increases the synthesis and release of acetylcholine in the brain. Increases neuronal membrane fluidity.

Why it Works:
Increases the synthesis and release of acetylcholine in the brain. Increases neuronal membrane fluidity.

L-theanine

Dose:
100 mg

Mechanism of Action:
Increases alpha waves in the brain, which helps with focus and stimulates GABA receptors to provide a calming effect.

Why it Works:
Increases alpha waves in the brain and stimulates GABA receptors.

Focus Formula 1 Magtein® + Bacomind®

➔ Description

➕ Magtein® brain bioavailable magnesium L-threonate.

➕ Bacomind®²⁶

Patented clinically tested nootropic plant (perennial herb) called bacopa monnieri.

Contains substances called bacosides, which are made-up of saponins.

Contains 9 bioactives from Bacopa.

➔ Mechanism of Action

Magtein® Magtein increases brain magnesium levels, which increases neuronal synaptic density, function and plasticity. Magtein® has been shown to improve memory and cognition in those with mild cognitive impairment.²⁰

Bacomind® Increases antioxidant enzymes in the brain (superoxide dismutase, catalase and glutathione peroxidase).²⁷

Protects the brain from oxidative stress (including smoking)

Scavenges free radicals and protects lipids from oxidation, including smoking²⁸ and nicotine²⁹

May reduce the breakdown of acetylcholine via anticholinesterase inhibiting properties.³⁰

In animal-models of Alzheimer's disease it lowers the levels of amyloid-beta proteins.³¹

Dose:

Magtein 1-2 grams.

Bacomind® Adults: 300-450 mg/day Children: 225 mg/day

Safety:

No safety issues.

Benefit:

Increases antioxidant enzymes in the brain, protects brain from oxidative stress, may reduce breakdown of acetylcholine, may lower amyloid-beta proteins in the brain and has neuroprotectant properties. Improves ADHD symptoms.

Claims:

Supports focus.

Supports memory.

Supports learning.

Clinicals

Animals

Improves learning and memory in mice.³²

4 Human Clinicals on Efficacy

1. Population: 28 children requiring individual education program with Intelligent Quotient between 70-90³³
 - a. Bacomind® 225 mg as single oral dose for a duration of four months
 - b. Significant improvements in working memory and short-term verbal memory in 70.83% of study population.
 - c. Results: Significant improvement was also seen in logical memory, memory related to personal life and also in visual as well as auditory memory.
 - d. BacoMind® was also found to be well tolerable with no major side effects.³³
2. Patient Population: ADHD children between the ages of 6-12 years, with an age of onset of ADHD before 7 y of age.³⁴
 - a. Bacomind® 225 mg once daily for 6 months
 - b. Results: Significantly reduced the subtests scores of ADHD symptoms. The symptom scores for restlessness were reduced in 93% of children, whereas improvement in self-control was observed in 89% of the children. Similarly, symptom scores for learning problems, impulsivity, and psychiatric problems were reduced for 78%, 67%, and 52% of children, respectively.³⁴
3. Patient Population: Elderly individuals with MMSE score of 24 and above were enrolled.³⁵
 - a. BacoMind® or placebo was given as a single oral dose of 450 mg daily for the duration of 12 weeks.
 - b. BacoMind® improved performance in tests associated with attention and verbal memory in elderly participants.
4. Patient Population: 98 healthy participants over 55 years of age³⁶
 - a. BacoMind® 300 mg/day
 - b. Bacomind® significantly improved verbal learning, memory acquisition, and delayed recall.

Focus Formula 2 Magtein® + Alpha-GPC

➔ Description

- ➕ Magtein® is a brain bioavailable magnesium called magnesium L-threonate.
- ➕ Alpha-GPC or alpha-glycerophosphocholine, use to be known as choline alfoscerate is a choline containing supplement.

➔ Mechanism of Action

Magtein® Magtein increases brain magnesium levels, which increases neuronal synaptic density, function and plasticity. Magtein® has been shown to improve memory and cognition in those with mild cognitive impairment.²⁰

Alpha-GPC Increases the synthesis and release of the neurotransmitter acetylcholine in the brain (hippocampus, frontal cortex and striatum) which helps with memory.

An older name for alpha-GPC was choline alfoscerate.

Increases neuronal membrane fluidity.

Alpha-GPC was compared with CDP-choline in 2 multicenter, randomized, controlled studies among patients with multi-infarct dementia. Both investigations showed significant improvements in most neuropsychological and behavioral instruments in the alpha-GPC recipients compared with CDP-choline recipients; both drugs were well tolerated.²⁴

Dose:

Magtein 1-2 grams.

Alpha-GPC 1,200 mg/day.

Safety:

No safety concerns.

Benefit:

Increases the synthesis and release of acetylcholine in the brain. Increases neuronal membrane fluidity.

Claims:

Supports memory.

Supports learning.

Supports healthy neurons.

Clinicals

1. Alpha-GPC (choline alfoscerate) at 400 mg three times daily
 - a. Supplementation of Alpha-GPC at 400mg three times daily (1,200mg daily) for 180 days in persons with mild to moderate Alzheimer's disease was able to improve symptoms as assessed by a multitude of rating scales including ADAS, MMSE, CDI, and GDS.²⁵
2. Alpha-GPC 800 mg in morning and 400 mg at 4PM in probable Alzheimer's disease with clinical onset after 65 years of age (senile dementia of Alzheimer's type).
 - a. Significantly improved MMSE scores, verbal memory (as assessed by Rey's 15-word test), immediate and delayed recall scores, intellectual and emotional impairments, 'affective disorders', 'apathy', 'somatic functioning', as well as the item 'overall impression'.²⁴

Focus Formula 3 Magtein® + L-theanine

➔ Description

- ✦ Magtein® is a brain bioavailable magnesium.
- ✦ L-theanine is a non-protein amino acid found in both green and black tea.

➔ Mechanism of Action

Magtein® Magtein increases brain magnesium levels, which increases neuronal synaptic density, function and plasticity. Magtein® has been shown to improve memory and cognition in those with mild cognitive impairment.²⁰

L-theanine⁸ Crosses the blood brain barrier within 30 minutes after consumption directly impacting the brain

50 mg of L-theanine increases activity in the alpha-1 frequency band of resting brain activity, which indicates that it relaxes the mind without inducing drowsiness.

An increase in the activity of alpha-bands also appears important for suppressing distracting visual information during demanding tasks. Thus, L-theanine may also help with focus.

Dose:

Magtein 1-2 grams.
L-theanine 100 mg.

Safety:

No safety issues reported in the clinicals.

Benefit:

Increases alpha waves in the brain and stimulates GABA receptors.

Claims:

Supports stress.
Relaxes the mind.
Helps with focus.

Clinicals

1. L-theanine - 97 mg of L-theanine and 40 mg caffeine vs. placebo significantly improves accuracy during task switching and self-reported alertness and reduced self-reported tiredness. L-theanine in combination with caffeine helps to focus attention during a demanding cognitive task.³⁷

formula Magtein® BRAIN ENERGY

Having energy throughout the day is extremely important in order to be productive and to have lasting energy to perform work tasks throughout the day. Millions of Americans turn to coffee everyday as a brain energy boost, but many people don't like how it makes them feel jittery.

Magtein® is a supplement that naturally helps to support brain energy. Magtein® increases magnesium in the brain which helps to support energy production in the brain.

Rhodiola is an adaptogenic shrub that has been used in traditional medicine to alleviate anxiety, stress, fatigue and depressed mood for centuries.

Ginseng contains two main active ingredients, ginsenosides and gintonin.

Caffeine Is a natural stimulant that provides increased energy throughout the day.

formulas at a glance

Target population: Gamers & executives



Dose:
1-2 grams

Mechanism of Action:
Increases brain magnesium levels and increases energy production in the brain.



Rhodiola

Dose:
400 mg

Mechanism of Action:
Stimulates brain function. Lowers cortisol levels. Combats mental and physical fatigue.

Why it Works:
Decreases cortisol response to awakening stress perhaps via reducing corticotropin-releasing factor.

Ginseng (American or Panax)

Dose:
250-2,000 mg

Mechanism of Action:
Lowers oxidative stress in the brain, reduces fatigue after stressful events.

Why it Works:
Increases energy production in cells, increases lactate dehydrogenase activity and reduces lactic acid levels in blood, increases mitochondrial biogenesis factors and mitochondrial DNA in skeletal muscles of animals and may be good for reducing exercise fatigue.

Caffeine

Dose:
80-160 mg

Mechanism of Action:
Stimulates the brain.

Why it Works:
Stimulates sympathetic nervous system and inhibits adenosine receptors.

Brain Energy Formula 1

Magtein® + Rhodiola + Ginseng +/- Caffeine

➔ Description

- Magtein® is a patented form of magnesium L-threonate that increases magnesium levels in neurons.
- Rhodiola is an adaptogenic shrub that has been used in traditional medicine to alleviate anxiety, stress, fatigue and depressed mood for centuries.

➔ Mechanism of Action

Magtein® Magtein increases brain magnesium levels, which increases neuronal synaptic density, function and plasticity. Magtein® has been shown to improve memory and cognition in those with mild cognitive impairment.²⁰

Rhodiola³⁸ Has a stimulant type of effect in the brain and improves learning via stimulation of nicotinic, cholinergic, noradrenergic, 5-hydroxytryptaminic and dopamine receptors in selected brain regions may contribute to its adaptogenic effects.

Decreases stress related fatigue due its adaptogenic effects.

Decreases cortisol response to awakening stress perhaps via reducing corticotropin-releasing factor.

Improves mental performance and the ability to concentrate.

Helps individuals with mental and physical fatigue resulting from stress conditions.

Ginseng Contains two main active ingredients, ginsenosides and gintonin

Protects the brain against damage caused by free radicals

Lowers oxidative stress

Increases energy production in cells, increases lactate dehydrogenase activity and reduces lactic acid levels in blood, increases mitochondrial biogenesis factors and mitochondrial DNA in skeletal muscles of animals and may be good for reducing exercise fatigue.⁴⁰

Water soluble polysaccharides have anti-fatigue activity.^{41, 42}

Caffeine Stimulates the sympathetic nervous system and blocks adenosine receptors.

Dose:

Magtein 1-2 grams.

Rhodiola 400 mg per day.

Ginseng 250-2,000mg.

Caffeine 80-160mg.

Safety:

Good safety data from clinicals

Benefit:

Stimulates brain function. Lowers cortisol levels. Combats mental and physical fatigue.

Claims:

Supports mental focus.

Supports mental performance.

Supports learning.

Supports physical and mental work capacity during stress.

Supports fatigue.

Clinicals

Rhodiola

1. Rhodiola in 100 patients with prolonged or chronic fatigue symptoms, 200 mg twice daily significantly improved fatigue symptoms and had a good safety profile.³⁹
2. Rhodiola exerts an anti-fatigue effect that increases mental performance, particularly the ability to concentrate, and decreases cortisol response to awakening stress in burnout patients with fatigue syndrome.³⁸
3. Clinical effects and good tolerability were observed at daily Rhodiola extract doses of 340–680 mg with treatment durations of up to 42 days.

Ginseng

1. Patients with chronic fatigue 20% ethanol extract of 1 gram of panax ginseng reduced physical and mental fatigue.⁴³
2. Cancer survivors – 1,000 to 2,000 mg of American ginseng lead to lower fatigue levels vs. placebo.⁴⁴
3. Meta-analysis of 4 randomized controlled trials shows that ginseng significantly reduces fatigue.⁴⁵
4. Lowest effective dose is 200 mg.⁴⁶

formula Magtein® ENERGY

Almost everyone at some point in their day feels a lack of energy. Whether you are a competitive athlete, gamer, high-level executive or a stay-at-home mom, all of us can use a pick me up during the day.

Magtein® is a unique magnesium supplement that helps increase brain magnesium levels. An elevation in brain magnesium levels helps with focus and provides the mitochondria in your brain with more energy so you can feel more alert and energized throughout the day.

Other ingredients that work synergistically with Magtein® to support energy include caffeine, taurine, ginseng, L-theanine, rhodiola, MCT (C8) powder and organic mushrooms.

formulas at a glance

Target population: High functioning executives/
gamers/athletes



Dose:
1 gram

Mechanism of Action:
Increases brain magnesium supporting focus and energy for the brain.



Caffeine or ER caffeine

Dose:
80 mg

Mechanism of Action:
Supports increased mental and physical performance.

Why it Works:
Caffeine is a natural stimulant that promotes energy.

Taurine

Dose:
1g

Mechanism of Action:
Increases antioxidant enzymes and improves energy.

Why it Works:
Taurine is an amino acid and is well known for its energy boosting properties.

Ginseng

Dose:
125-1,000 mg

Mechanism of Action:
Reduces fatigue and improves tolerance to stressful events.

Why it Works:
Ginseng lowers oxidative stress.

AND/OR

Rhodiola

Dose:
200-300 mg

Mechanism of Action:
Stimulates brain function, lowers cortisol levels and combats mental and physical fatigue.

Why it Works:
Improves mental performance and the ability to concentrate.

L-theanine

Dose:
100 mg

Mechanism of Action:
Helps with focus during cognitive tasks and reduces jitters from caffeine.

Why it Works:
In combination with caffeine helps to focus attention during a demanding cognitive task.

MCT (C8 powder)

Dose:
2,000-3,000 mg

Mechanism of Action:
Provides ketones as a source of fuel for the brain and muscle.

Why it Works:
Provides an increase in ketones for energy for the brain and body.

Lion's Mane, Cordyceps, Reishi or other Organic Mushroom powders

Dose:
500 mg

Mechanism of Action:
Supports the immune system and boosts energy.

Why it Works:
A natural way to promote energy and improve focus.

Energy Formula

Magtein +/- Caffeine, Taurine, L-theanine, Ginseng and/or Rhodiola, MCT (C8) powder & Organic Mushrooms

Description

- + Magtein® is a patented form of magnesium L-threonate that increases magnesium levels in neurons.
- + Caffeine is a natural stimulant that promotes energy.
- + Taurine is an amino acid and is well known for its energy boosting properties. It also serves as an antioxidant.
- + Ginseng has been used in traditional Chinese medicine for centuries. The two most common forms are American ginseng and Asian ginseng.
- + L-theanine is a non-protein amino acid found in both green and black tea.
- + Rhodiola is an adaptogenic shrub that has been used in traditional medicine to alleviate fatigue for centuries.
- + MCT (C8 powder) is caprylic acid or a medium chain triglyceride that increases ketone bodies to support fuel for the brain and muscle.
- + Organic mushrooms, otherwise known as functional fungi, are grown on purple corn and are whole mushroom powders.

Mechanism of Action

Magtein® is a patented form of magnesium L-threonate that increases magnesium levels in neurons. Other common magnesium supplements do not increase brain magnesium levels, making Magtein® a unique magnesium.

Caffeine is a natural stimulant that provides increased energy throughout the day. Caffeine stimulates the sympathetic nervous system and blocks adenosine receptors.

Taurine is an amino acid that helps increase energy.

Acts as an antioxidant and reduces oxidative stress.

Regulates calcium levels in muscles improving muscle contraction and power.

Reduces fatigue and muscle damage during a workout.

Improves performance.

Ginseng contains two main active ingredients, ginsenosides and gintonin

Lowers oxidative stress.

Increases energy production in cells, increases lactate dehydrogenase activity and reduces lactic acid levels in blood, increases mitochondrial biogenesis factors and mitochondrial DNA in skeletal muscles of animals and may be good for reducing exercise fatigue.¹

Water soluble polysaccharides have anti-fatigue activity.^{2,3}

L-theanine 97 mg of L-theanine and 40 mg caffeine vs. placebo significantly improves accuracy during task switching and self-reported alertness and reduced self-reported tiredness. L-theanine in combination with caffeine helps to focus attention during a demanding cognitive task.⁴

Rhodiola Has a stimulant type of effect in the brain and improves learning via stimulation of nicotinic, cholinergic, noradrenergic, 5-hydroxytryptaminic and dopamine receptors in selected brain regions may contribute to its adaptogenic effects.

Improves mental performance and the ability to concentrate.

Helps individuals with mental and physical fatigue resulting from stress conditions.

Rhodiola in 100 patients with prolonged or chronic fatigue symptoms, 200 mg twice daily significantly improved fatigue symptoms and had a good safety profile.⁵

Rhodiola exerts an anti-fatigue effect that increases mental performance, particularly the ability to concentrate, and decreases cortisol response to awakening stress in burnout patients with fatigue syndrome.⁶

MCT (C8 powder) Provides an increase in ketones for energy for the brain and body.

Organic Mushrooms Lion's Mane, Cordyceps and Reishi have been used for centuries as a natural way to promote energy and improve focus.

Dose:

Magtein 1 grams.

Caffeine or ER caffeine 80 mg.

Taurine 1 gram.

Ginseng 125-1,000 mg.

Rhodiola 200-300 mg.

L-theanine 100mg.

MCT (C8 powder) 2,000-3,000 mg.

Lion's Mane, Cordyceps, Reishi or other Organic Mushroom powders 500 mg.

Safety:

Good safety from clinical studies..

Benefit:

Increases serotonin levels in the brain.

Claims:

Supports focus.

Support energy.

Supports performance.

Supports physical and mental work capacity.

Supports fatigue.

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