

Nootropics

Giurgea's Nootropic Criteria:

Enhances learning and memory.
 Enhances learned behaviors under conditions which are known to disrupt them (e.g. hypoxia (oxygen deficiency)).
 Protects the brain from physical or chemical injury. Enhances the tonic cortical/subcortical control mechanisms
 Exhibits few side effects and extremely low toxicity, while lacking the pharmacology of typical psychotropic drugs (motor stimulation, sedation, etc.).

What's nootropic ?:

Nootropics, also known as smart drugs, are cognitive enhancers. They improve mental functions cognition, memory, intelligence, motivation, attention, focus, concentration, alertness and more.

Read more at nextgen-human.com

Dictionary

Adaptogens Natural metabolic regulators that increase the ability of organism to adapt to environmental factors and to avoid damage from such factors. Nontoxic substance and especially a plant extract that is held to increase the body's ability to resist the damaging effects of stress and promote or restore normal physiological functioning.

Dictionary (cont)

Neurotransmitter Chemical released by neurons to stimulate neighbouring neurons, allowing impulses to be passed from one cell to the next throughout the nervous system. A nerve impulse arriving at the axon terminal of one neuron stimulates release of a neurotransmitter, which crosses the microscopic gap (see synapse) in milliseconds to the adjoining neuron's dendrite. For example acetylcholine, dopamine, and serotonin.

Inhibitor An agent that slows or interferes with a chemical reaction, a substance that reduces the activity of another substance (as an enzyme), a gene that checks the normal effect of another nonallelic gene when both are present.

MAO-B inhibitor Inhibitor of the enzyme monoamine oxidase B. MAO-B helps break down dopamine; inhibiting it prolongs the action of dopamine in the brain.

Precursor A substance, cell, or cellular component from which another substance, cell, or cellular component is formed especially by natural processes.

Cofactor A substance that acts with another substance to bring about certain effects.

Dictionary (cont)

Agonist A chemical substance (as a drug) capable of combining with a receptor on a cell and initiating the same reaction or activity typically produced by the binding of an endogenous substance.

Natural Nootropics

Bacopa Monnieri Bacopa also is an effective antioxidant and has been used in a number of anti-aging formulas. The primary medical ingredient derived from the Bacopa Monnieri plant is the bacopasaponins alkaloid. Studies of this drug show that it can improve several different factors related to memory at the same time including memory formation, retention of concepts, and restoration. The effects of Bacopa as a Nootropic will be best experienced with long-term consistent usage.



Natural Nootropics (cont)

Huperzine-A Has been used for its nootropic benefits for hundreds of years, it is only recently that we discovered the mechanism of action of this supplement. Huperzine-A blocks the production of acetylcholinesterase – a chemical which breaks down the neurotransmitter Acetylcholine when there is too much of it. By inhibiting certain receptors that control the amount of acetylcholinesterase produced, Huperzine-A is therefore able to indirectly affect acetylcholine levels. Higher amounts of acetylcholine lead to improved cognition and learning scores as well as better memory. Acetylcholine also plays a role in protecting brain cells from dying as well as being necessary in the formation of new brain cells.

Natural Nootropics (cont)

Ginkgo biloba The ginkgo tree leaves contain terpenoids and flavonoid glycosides which act as monoamine oxidase inhibitors. Ginkgo also improves circulation throughout the body, protects organs from free radicals and oxidative damage to the cells and may be able to prevent the formation of blood clots. Ginkgo Biloba has proven effective at enhancing cognition in patients diagnosed with dementia and is used to boost the memory and concentration. While it may not be as strong as other nootropics, it is a good addition to any natural nootropic stack.

Natural Nootropics (cont)

The Lion's Mane Mushroom (known by the scientific name of *Hericium erinaceus*) is an edible mushroom that grows in North America. Lion's Mane is popular in traditional Chinese medicine serving as an antioxidant and helping to regulate blood lipid and blood glucose levels. Pills made from Lion's Mane are even used to treat gastric ulcers. For those interested in the nootropic benefits of this mushroom, a 2009 study from Phytotherapy Research found that taking this mushroom resulted in improved cognitive ability. Other studies have shown that Lion's Mane increases nerve growth factor secretions. NGF is a protein that is vital to the growth and maintenance of neurons in the brain, contributing to long-term brain health.



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Natural Nootropics (cont)

Yerba Mate Enhance alertness and mental acuity without stimulant-type side effects, like nervousness. Yerba mate, appears to give your brain a boost without making you nervous. You feel alert and sharp. Interestingly, it actually works as a tonic for the central nervous system, calming the body and the mind. It has also been shown to improve mood and concentration, reduce anxiety, and prevent mental fatigue. A typical cup contains up to 10 times more of this stimulant than there is caffeine in a cup of coffee.

Source: bestnootropic.org

Movie Drugs (fiction)

NZT-48, Limitless With the help of a mysterious pill that enables the user to access 100 percent of his brain abilities, a struggling writer becomes a financial wizard, but it also puts him in a new world with lots of dangers.

Source: imdb.com

Nootropics Types

Racetams piracetam, oxiracetam, phenylpiracetam, aniracetam, nefiracetam

Vitamins and supplements B Vitamins, Omega - 3, Isoflavones, Vitamin D

Nootropics Types (cont)

Dopaminergics *A)Metabolic precursors:* L-Phenylalanine, L-Tyrosine, L-DOPA, Biopterin, Pyridoxal-phosphate *B)Reuptake inhibitors:* Amineptine, Methylphenidate, Bupropion *C)MAO-B inhibitors:* Selegiline, Rasagiline, Rhodiola rosea *D)Dopamine agonists:* Ropinirole, Pramipexole, Amisulpride *E)Others:* Mucuna pruriens (Velvet Bean), Modafinil: Citicoline

Stimulants *A)Amphetamines:* Amphetamine (Adderall, Dexedrine), Lisdexamfetamine (Vyvanse), Methamphetamine (Desoxyn) *B)Adrenergics:* Atomoxetine, Reboxetine, Synephrine (found in Bitter orange) *C)Cholinergics:* Arecoline, Nicotine *D)Eugeroics* ("Wakefulness Enhancers"): Adrafinil, Armodafinil, Modafinil *E)Xanthines:* (reduces fatigue perception): Caffeine, Paraxanthine, Theobromine, Theophylline

Nootropics Types (cont)

Cholinergics *A)Precursors:* Choline, DMAE, Meclofenoxate, Alpha-GPC *B)Cofactors:* Acetylcarnitine, Vitamin B5 *C)Acetylcholinesterase inhibitors:* Galantamine, Ipidacrine (Neiromidin), Lycoris radiata (Red Spider Lily), Huperzine A, Donepezil, Rosemary, Sage, Celastrus Paniculatus, Cannabis *D)Reuptake inhibitors and enhancers:* Coluracetam, Ginsenosides Source, Agonists, Ispronicline, Nicotine, Arecoline

GABA blockers Suritozole, A5IA

Glutamate activators CX-717, IDRA-21, LY-503,430

cAMP Propentofylline, Rolipram, Mesembrine

Serotonergics *A)Precursors:* 5-HTP, Tryptophan *B)Cofactors:* Pyridoxal *C)Reuptake inhibitors:* SSRIs, Scelletium tortuosum, Hypericum perforatum *D)MAO-A inhibitors:* Resveratrol, Curcumin, Piperine, Harmal, Rhodiola rosea *E)Reuptake enhancers:* Tianeptine



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Nootropics Types (cont)

Anti-stress Beta blockers, Lemon Balm, Passion Flower, Rhodiola Rosea, St John's Wort, Ginseng (including Siberian ginseng), Sutherlandia frutescens, Kava—anxiolytic herb, Tea, Theanine, Grape seed extract, Adafenoxate, Phenibut, Picamilon, Valerian, Butea frondosa, Gotu Kola, Foti, Panax ginseng, Chinese herbs such as Polygala tenuifolia, Acorus gramineus and Huperzia serrata, Bacopa monnieri, Tulsi (Ocimum sanctum, sweet holy basil)

Blood flow, metabolic Blessed Thistle, Coenzyme q-10, Creatine, Lipoic acid, Pyritinol, Picamilon, Ginkgo biloba, Vinpocetine, Vincamine, Nicergoline

Experimental *histamine antagonists* : The H3, Ciproxifan, A-349,821, ABT-239

Nerve growth stimulation, protection Idebenone, Melatonin, Glutathione, Acetylcarnitine, Inositol, Anticonvulsants, Phosphatidylserine, Lion's Mane Mushroom, SAM-e (S-Adenosyl methionine), Acetylcysteine (L-cysteine), Uncaria tomentosa (Cat's Claw)

Nootropics Types (cont)

Direct hormones Vasopressin, Pregnenolone, Orexin

Secondary enhancers DHEA

Unknown enhancement Bacopa monniera (Brahmi), Clitoria ternatea (Shankhpushpi), Fipexide, Gerovital H3, Sulbutiamine, Royal Jelly, Curcumin

Adaptogens Holy Basil, Tulsi, Ginseng, Rhodiola rosea, Ashwaganda (Withania somnifera), Reishi (Ganoderma lucidum)

Other mexidol, hydergine, noopept, selank, semax, bifemelane. Nootropic combination of artichoke extract + forskolin or other combinations of 2 or more substances.

Popular

Top popular nootropics Noopept, Pramiracetam, Modafinil, Adrafinil, Sulbutiamine, Phenylpiracetam, Aniracetam, 5-HTP, Huperzine A, Choline (as additional component)

Most used daily nootropics L-theanine, Caffeine, Ginseng, Gingko

WWW sources

<http://nextgen-human.com> It's blog about not only nootropics but things that can help You achieve next level of human existence (under construction).

WWW sources (cont)

<https://en.wikipedia.org/wiki/Nootropic> Wikipedia site about nootropics.

<http://www.nootropics.com/refs/index.html> Very big list of smart drugs.

<http://brainmeta.com/forum/> Forum about cognitive enhancers.

<http://www.longevity.org/forum/forum/169-brain-health/> Another forum about cognitive enhancers.

About this cheatsheet

This document is a summary of a number of articles from various sources about the "Smart Drugs". I create a blog on this subject which will have much more information on nootropic drugs but not only. If you like this cheatsheet go to my website <http://nextgen-human.com> and leave comment :)

Read more on nextgen-human.com

Racetams

Piracetam Piracetam is a cognitive enhancer and memory enhancing supplement. Many people across the world use the nootropic, piracetam, to effectively retain knowledge and improve memory. Piracetam is utilized by both younger and older healthy individuals.

Racetams (cont)

Aniracetam An ampakine and a fat-soluble nootropic of the racetam chemical class purported to be considerably more potent than Piracetam. Aniracetam has the potential of enhancing what is already memorized within ones mind and allows the mind to reach a state of concentration. Although Aniracetam is more potent than Piracetam, it has unique functions which allow more stimulation of the Acetylcholine receptors and increased focus and energy within the human brain.

Pramiracetam Lipid-soluble nootropic of the Racetam chemical family, and has a relatively similar chemical structure compared to its cousin Aniracetam. However, Pramiracetam is much stronger than Aniracetam.

Phenylpiracetam Shown in a clinical study to have a wider and more effective range of benefits in comparison with Piracetam. Phenylpiracetam was shown to improve memory functions, problem solving skills, and attention switching. Another study showed Phenylpiracetam had a wide range of benefits including increased locomotion skills, antidepressant benefits, and memory enhancement.

Racetams (cont)

Oxiracetam Racetam and an ampakine that is promoted as a natural method of improving cognitive functions through the stimulation of ACh receptors, AMPA receptors and NDMA receptors. There have been clinical studies to suggest Oxiracetam can improve perception, memory, focus, concentration, and alertness. In some studies, Oxiracetam has been shown to increase simple reaction times.

Source: smartdrugsforthought.com

Other smart drugs

Adrafinil While commonly considered a stimulant does not stimulate motor coordination like other stimulants, and is primarily a cerebral stimulant. Connected with a stimulation of Hypocretin, Adrafinil increases how alert and awake one feels. A higher level of Hypocretin causes an increase in dopamine, norepinephrine, and histamines. All three of these play a role in overall energy levels, making Adrafinil a choice nootropic to take before a intense workout or long study session.

Other smart drugs (cont)

Alpha-GPC Source of Acetylcholine and a fat-soluble nootropic of the Choline chemical class. Alpha-GPC is widely used to help and to treat Alzheimer's, to help in the recovery of victims of a Stroke, improve the memory and overall mood of people suffering from Dementia. Alpha-GPC is used as a Nootropic supplement to help improve and increase memory and cognition.

CDP Choline Source of Acetylcholine and a water-soluble nootropic of the Choline chemical class. CDP Choline is widely used to help and to treat Alzheimer's and as a Nootropic supplement to help improve and increase memory and cognition. CDP Choline has been shown to counteract neural degeneration and reduce the number of apoptotic cells present. CDP Choline also helps improve visual function in persons suffering from Glaucoma, and Amblyopia. CDP Choline is known to help increase the glucose metabolism in the brain as well as cerebral blood flow.



Other smart drugs (cont)

Centrophenoxine Cholinergic compound that contains DMAE, and is lipid soluble. Centrophenoxine increases the uptake of oxygen and glucose uptake in the brain. Through the increase of glucose uptake, Centrophenoxine helps in rectifying the damage done to the brain from aging. The brain uses 20 percent of the body's oxygen, if the oxygen levels become deficient the brain loses efficiency. By increasing the flow of oxygen to the brain Centrophenoxine helps increase the productiveness of the brain all around.

L-Theanine Not just improve scores on tests of learning and memory, it also affects many other variables. L-Theanine has been shown to lower blood pressure, and anxiety. It has also been shown to aid in the improvement of the body's immune system by increasing the amount of affliction fighting gamma delta T-Cells, and increasing antibacterial proteins.

Other smart drugs (cont)

Sulbutiamine Fat-soluble nootropic, that passes the Blood Brain Barrier more readily than Thiamine. Sulbutiamine is known to be cholinergic, glutamatergic and dopaminergic. The potentiation of glutamatergic activity in the Prefrontal Cortex is believed to be one of the Mechanisms of Action that grants Sulbutiamine the ability to increase memory functionality. Sulbutiamine is shown to cause an increase in cholinergic activities in the Hippocampus, this area of the brain plays a pivotal role in the consolidation of both short and long term memory as well as spatial navigation and memory. Another plausible cause of Sulbutiamine improving cognition and memory is through the suppression and reduction of dopamine released in the Prefrontal Cortex. These various Mechanisms of Action make Sulbutiamine an understandable choice in improving cognitive and memory abilities.

Other smart drugs (cont)

Noopept Recent nootropic that was first patented in Russia in 1995. Noopept has been shown to have neuro-protective qualities through the stimulation of a protein known as Nerve Growth Hormones (NGH) which plays an active role in reducing and even preventing neuronal degeneration in the hippocampus. The effective dose range of Noopept in comparison to Piracetam was 1000 times lower and also that spectrum of mnemotropic activity was greater in regards to Noopept. This showed that the dipeptide Noopept was much stronger than Piracetam.

Source: smartdrugsforum.com



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