



BRAIN HEALTH PROTOCOL

— *Your guide to* —

Optimizing

PROCESSING SPEED
**MEMORY
& FOCUS**

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WHAT IS A BRAIN?

The brain is a tangled mass of spongy tissue infused with electrical pulses. It is paradoxically one of the most researched and most mysterious organs in the human body.

The brain is the seat of cognition – where your thoughts originate and where your memories reside.

Your brain is arguably your most important piece of hardware because without it, you're not yourself. Eating a Snickers bar won't fix sub-optimal brain health.

Your brain consumes more fuel than any other organ. It's complex, it can be temperamental, and if you don't treat it right, it won't treat you right.

Below are some simple, powerful steps you can take to support your brain health.[†]



SATURATED FAT

- YOUR BRAIN'S BEST FRIEND

As humans evolved, their brains grew, creating a greater demand for energy, consuming 16 more times the fuel than skeletal muscle.

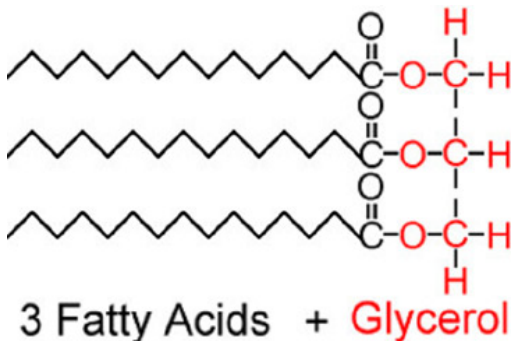
Fats are crucial to the survival of the human brain as they produce the largest amount of currency for brain energy – ATP.



In fact, 20-25% of the energy you use every day is [accounted for by the brain](#). A [Neuroimaging study](#) found that the brain possesses the ability to quickly and accurately evaluate the energy content of foods, which suggests an evolutionary adaptation based on the brain's need to sustain energy.

Since your brain is, by far, the largest consumer of energy, you need to be mindful of what you're feeding it. Your brain's favorite food is saturated fat.

Saturated fats contain a long chain of carbon groups with hydrogens on every side, but no carbon on the outside. They look something like this:



Saturated fats are much better at producing energy than sugar. Rather than giving you quick energy that isn't sustainable, saturated fats produce long-lasting energy.

So if you want enough energy to get your brain through the day, don't shy away from saturated fats.

Saturated fat is generally solid at room temperature. [Coconut oil](#) and raw butter (unpasteurized) are two of the best sources of saturated fats. As it pertains to your meals, avocados, eggs, and grass-fed beef are also excellent sources.

If you like cooking with oil, ditch your vegetable oils and start cooking with saturated fats instead.

Your brain won't get as much out of it as you would if you just ate it, but the rest of your body will thank you. Vegetable oils are unstable at high temperatures and can cause a wide array of problems.

SATURATED FAT VS TRANS FAT

Saturated fats are often confused with trans-fats. These two are NOT the same fats. Saturated fats are the naturally solid non-vegetable oil fats that have all the benefits we've already discussed.

Trans-fats are generally unsaturated vegetable oils that are normally liquid at room temperature. Through a process called hydrogenation, the molecular structure of the oil is altered, causing it to become

called hydrogenation, the molecular structure of the oil is altered, causing it to become solid at room temperature. This process is so volatile and creates such a foul smell that the oil actually has to undergo a deodorization process. This is how butter alternatives like margarine are created.

Trans fats are associated with a myriad of health concerns due to their effects on the body, especially the brain. Trans fats accumulate in the brain and actually [change the brain's fatty acid composition](#).

They've also been linked to mood changes like [increased aggression](#). Of the most significance is the deleterious effects on omega-3 production. Trans fats actually [inhibit the enzyme](#) that produces omega-3 fatty acids in the body.

Your brain, in addition to being incredibly fond of energy, also loves cholesterol. Although demonized for many years, cholesterol is actually a molecule that is essential to life.

Cholesterol is the base of all sex hormones (estrogen, testosterone, etc.), it helps stabilize cell membranes creating more effective cellular communication, and it's a large part of [maintaining healthy neuronal \(brain cell\) function](#).

Dietary fats are also broken down and used for cholesterol production. So go get some saturated fats and start optimizing your brain health.



WHY SLEEP IS NOT A LUXURY

Like breathing, sleeping is something innate to every mammal and is required for survival. In today's world, sleep has become a luxury – saved only for those able to afford the time to spend sleeping.

Some wear it like a badge and proudly display their grande-sized coffee to show how they're going to make it through the day.

People are spending more time “doing” and less time “sleeping”. If you've got a limited amount of time on earth, doesn't it make sense to cut back on the aspect that steals most of your day?

No. Not really. Unless you're willing to sacrifice a lot. Hopefully this will help you gain an understanding about why sleep is so essential and will make you make the time for it.

Sleep can be broken down into two categories, non-rapid eye movement (NREM) and REM. There are four stages of NREM that lead up to REM. Each of these stages is associated with specific types of brainwave patterns.



- **Stage I** is the lightest of phases, characterized by brainwaves that are transitioning from alpha and beta (wakefulness waves) to slower theta waves. It lasts 1-7 minutes and accounts for 2-5 percent of total sleep. This stage is easily disrupted by external stimuli or anxious thoughts.
- **Stage II** is a bit deeper and requires a stronger stimulus to wake you up. Initially it lasts 10-20 minutes, but it cycles and gets longer with each successive cycle. Stage II eventually accounts for 45-55 percent of total sleep. It is also during this stage that [consolidation of memory](#) takes place.
- **Stage III** is the first stage of slow, delta wave sleep. It only lasts a few minutes and constitutes 3-8 percent of total sleep.
- **Stage IV** is the deepest of slow, delta wave sleep, and lasts approximately 20-40 minutes in the first cycle. It accounts for 10-15 percent of sleep.

While NREM sleep is associated with decreased wakefulness, REM sleep is the opposite. The sleep is still very deep, but the brain is much more active, specifically in the motor and sensory regions. This makes sense considering it is during this stage that dreaming takes place. In healthy people, the brain successfully inactivates muscle movement so dreams are not acted out, and there are bursts of rapid eye movements – hence the name, REM sleep.

It is also thought that REM dreams are the brain's way of processing and consolidating data it has collected as far as [six days prior to the dream](#). This cycle consists of a mixture of both theta and slow alpha waves, lasting only 1-5 minutes initially, but progressively increasing with each cycle.

Sleep is a time to rid your body of waste. Just as your lymphatic system works to rid the systemic body of toxins, the brain has to do the same. The problem is, the brain does not contain its own lymphatic system.

Instead, it relies on an increase of interstitial space and fluid (the space and fluid between brain cells) to allow for increased flow of cerebral spinal fluid (CSF, the fluid that flows around your brain and spinal cord). The increased CSF washes over the space, taking with it neurochemical waste like β -Amyloid to be discarded.

Studies have shown that increased CSF is part of the REM cycle, whereas it is [decreased during the NREM stages](#). Removal of neural waste may play an important role in staving off neurodegenerative states.

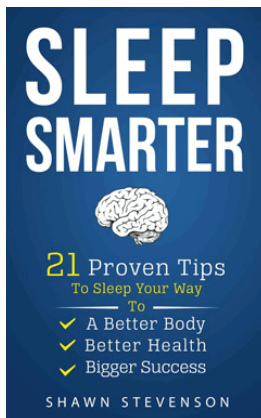
So you may think you're awesome because you can survive on 4-6 hours of sleep with the assistance of caffeine, but surviving is all you're doing. You're probably just barely surviving. If you take the couple extra hours to get some rest, you'll feel loads better, save money (because you won't be spending it on coffee or energy drinks), and you'll have more energy than you would if you were buying those drinks.

Our brains need sleep for a number of functions, and getting less than the required 7-8 hours can lead to less-than-optimal brain health. Sleep deprivation in humans has been [extensively studied](#) and is a well-known cause of diminished brain function that manifests as learning deficits, impaired cognition, and increased reaction time.

In other words, not sleeping enough makes it harder to learn, can make you seem less intelligent, and even slows down your ability to recognize what's happening right in front of your face. [Mice studies](#) have also shown that negative alterations in your genes may be another harmful effect of too little sleep.

HOW TO SLEEP BETTER

Now that you understand the necessity of sleep, how do you get better sleep? Below is a list of items focused on increasing sleep quality.



- Shawn Stevenson's "Sleep Smarter" book – This book is packed with tips and tricks that will teach you how to sleep effectively. You'll discover how sleep affects your mind and body. Plus, you'll get the how-to's on better sleep.

- **COMPLETE DARKNESS** – Artificial light has profoundly altered our circadian rhythms, tricking our brains into thinking it's daytime, keeping us from winding down and prepping our bodies for rest.

A room free of light will increase the production of melatonin, the main sleep hormone, and will remind your body that it's actually nighttime and time for bed.

You should not be able to see your hand in front of your face – that's how dark it should be. So get some blackout curtains and/or a sleep mask, remove all electronic devices from your bedroom or cover up the lights, and leave the TV out of the bedroom.

- **BLUE-BLOCKER GLASSES** – Blue light waves are shorter, so they reach the photoreceptor in our eyes that influences the circadian rhythm.

Blue lights, like the ones emitted from house lights and electronic devices, interfere with your normal circadian rhythm, keeping melatonin from releasing. So, your brain won't ever get the signal that it's time to go to bed. Or it gets delayed as a result of blue light.

Studies using amber colored glasses that block the [absorption of blue light](#) have been shown to increase sleep quality as well as mood (due to increased sleep quality).

- **EXERCISE** – Exercise has been shown to increase the quality and deepness of sleep. However you should mix up the types of exercise you're doing. Some days, perform high intensity training, other days lift weights, and always be sure to make time for active recovery – like walking or restorative yoga. Overtraining will burn out the adrenal glands, increasing cortisol levels and will make it more difficult for you to sleep.



- **POSITIVE ATTITUDE** – Studies have shown that maintaining a positive attitude is directly related to improved sleep, and the reverse is true too. Being happy in life will help you sleep will help you be happy in life! (source)

FOCUSED RELAXATION

Between jobs, finances, kids, schools, or whatever else you may have going on in your life, you're probably stressed out. Stress is an inevitable part of life. But it's important to take time to relax your mind.

The benefits of meditation and yoga not only increase mental relaxation, but they are also associated with increased cognition, thickening of gray matter, and an elevation of overall well-being.

Yoga has been studied extensively, and there is good evidence suggesting benefits for cognition, mood, memory, and anxiety. Some studies have even shown [changes in brain waves while practicing yoga](#).

Increases in beta waves (involved in task-focus) were seen after breathing-based yoga, while alpha waves from meditation and asana-based yoga increased the perception of calmness.

Meditation appears to have implications in brain health beyond relaxation. The act of relaxing may increase attention, memory, processing speed, cognitive flexibility, and creativity. A few studies have indicated that meditation may also be responsible for increases in gray matter.

If the brain is a telephone, gray matter cells receive and send messages via white matter, which is more like the telephone wire, propagating the signal from cell to cell. Since gray matter decreases with age, and people who meditate have an increased amount compared to those who do not meditate, it shows that meditation either [increases gray cells](#) in certain areas or it slows the decline of those areas. Scientists are still trying to figure it out, but either way, meditation seems to have an [anti-aging effect](#).



If you enjoy both meditation and yoga, Brain Wave Vibration (BWV) training may be worth your time. This holistic fitness practice, in combination with traditional yoga poses, utilizes small shaking motions of the head and neck (eventually the entire body) that become like “vibrations.” BWV is thought to strengthen the areas of the brain involved in energy distribution. [A study on people new to BWV](#) found improvements in mood, depression, well-being, vitality, mindfulness, and overall health. They also slept more efficiently. (source)

KRILL

- FROM THE ANTARCTIC OCEAN TO YOUR BRAIN†

Krill oil comes from tiny crustaceans called krill. They are the largest biomass on earth (even larger than humans despite their tiny size). DHA and EPA are essential fatty acids found in krill oil. Your body cannot synthesize them so you must consume them. EPA can be converted to DHA in the body, but it's a slow, cumbersome, and inefficient process.

However, DHA can be readily retro-converted to EPA when the body sees a need for increased EPA, which means that too little EPA almost certainly means too little DHA. Because the highest concentrations of these omegas are found in the brain and retina, supplementing to ensure adequate intake is beneficial, if not necessary.

Your brain and nervous system love DHA. High concentrations are found in the cell membranes of the nervous system. Regular dietary consumption of omega-3s helps support the health of areas of the brain like the hippocampus, responsible for memory.†

Increasing DHA levels have also been associated with maintaining a healthy mood, attention, and, cognitive performance.†

KRILL OIL & ASTAXANTHIN VS FISH OIL

It hardly seems like a good matchup. Krill oil, which contains astaxanthin, is a virtual powerhouse compared to fish oil.

Astaxanthin is a carotenoid. Carotenoids are potent antioxidants that are found in fruits and vegetables. They turn them bright yellow, orange, and red.

That decaying fish smell and taste you get from a fish oil capsule isn't what you want.

That means your fish oil is bad and that it has oxidized. The astaxanthin in krill oil helps prevent it from going rancid because of its role as an antioxidant.

Beyond that, astaxanthin and EPA can also help you maintain a healthy immune response.[†] But what truly makes krill oil stand apart from fish oil are its phospholipids.



Krill oil is ideal for human supplementation because it contains many phospholipids with DHA tails.

The phospholipid content (30-50%) makes krill oil absorption and delivery to target tissues like the eyes or brain greater than that of fish oil's triglycerides. (source)

The increased absorption also means that it takes a smaller amount to be effective than fish oil. One study showed that krill oil was equally as effective as fish oil, but with half the dose.

PHOSPHOLIPID BILAYER

The phospholipid bilayer is the fluid membrane that surrounds each of your body's cells. A phospholipid is a hydrophilic (water-loving) phosphate molecule that can interact with charged particles like water attached to a hydrophobic (fat-loving) tail.

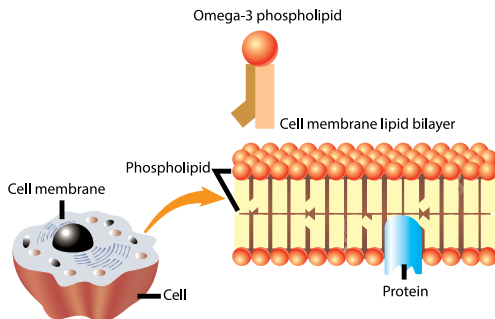
These molecules are stacked on top of each other, fat tail to fat tail, creating a unique protective barrier and doubles as a cell to cell signaling system.

Also in the cell membranes are proteins that function to transport molecules into or out of a cell as well as function as receptors, initiating the signal for a cascade of reactions deeper inside that cell.

Because the inner layer of the bilayer is composed of fats, it's very important that these fats are as fluid as possible, allowing for clear communication.

It's like sending a message in a bottle down the moving current of a river. The bottle will float from one end to the other very smoothly. Now imagine putting large logs in the river.

The bottle will still float along with the current, but it's going to take longer to reach its final destination and may even take a detour because it keeps bumping along the logs. It's important that a cell's signal reaches its destination in a timely manner and without impact, which is why EPA and DHA are so important for cell membrane fluidity.†



The lipids in the bilayer are comprised of all types of types of fatty acids – saturated, monounsaturated (MUFA, omega-9s), and polyunsaturated (PUFA, omega-6s and omega-3s).

However, due to the unsaturated nature of the omega-6s and -3s, these are ideal for the maximum fluidity. Because DHA and EPA can incorporate themselves into the cell membrane, this makes these two omega-3 compounds the ideal supplement to support cellular health.†

ALPHA BRAIN

Supplementation should not be your first strategy, but a well-designed supplement can be immensely beneficial.†

Alpha BRAIN is our flagship nootropic that contains earth grown nutrients. It has demonstrated statistically significant benefits in [two human clinical trials](#) with respect to memory, processing speed, and focus.†

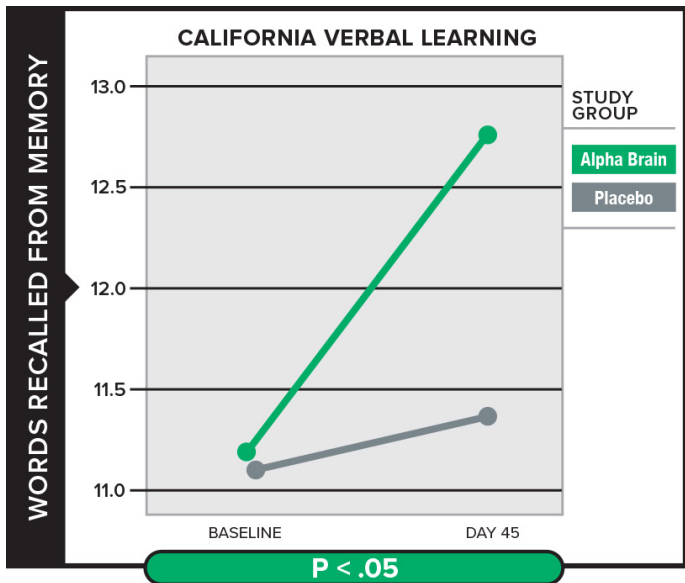
There is not a single supplement in the world that can magically make you smarter. Just like there aren't shoes that will make you run faster. Instead, Alpha BRAIN gives you the tools you need to help yourself. You just need to use them.

Athletes love Alpha BRAIN because it helps them analyze complex patterns. Performers and speakers are thankful because it allows them to easily pull words, names, and ideas from their memory banks. Others appreciate how it helps them focus without feeling like they're hopped up on caffeine.

[Alpha BRAIN](#) contains no harsh chemicals or unhealthy additives.



CLINICAL RESEARCH



Both Alpha BRAIN trials were conducted on healthy participants at the Boston Center for Memory and both trials showed statistically significant benefits. What's that mean to you? It means that regular people can [benefit from taking Alpha BRAIN](#).

In one study, over 60 subjects were tested on various forms of cognitive function over a period of 45 days. By the end of the study, the subjects who were randomly assigned to take Alpha BRAIN showed statistically significant improvement in the areas of executive function, verbal memory and processing speed.†

Some of the subjects from the clinical trial had their brain waves and processing speed measured using an electroencephalogram (EEG).

Despite the smaller sample size, significant differences were found. Subjects who took Alpha BRAIN had a higher frequency peak alpha wave, a type of synchronous neural oscillation that reflects a state of calm focus.†

The ability to recall a long list of words was significantly greater in the subjects who comprised the Alpha BRAIN group. This finding replicated initial data from a [pilot study](#) that also showed memory enhancement.†

But let's get into more of the how.

Alpha BRAIN was built using individual compounds that have shown memory improvement in other studies.

But the reason Alpha BRAIN stands out (other than being proven in two clinical trials) is because of its focus on increasing acetylcholine, vitamin B6's ability to target vital areas of neurotransmission, and other ingredients that help support overall brain health and performance.[†]

Three of the most important ingredients in Alpha BRAIN are AC-11, alpha GPC, and huperzine A. AC-11 is extracted from cat's claw through a unique process that involves hot water extraction.

Unlike less expensive forms of choline such as choline bitartrate, Alpha GPC is well absorbed and can cross the blood-brain barrier.

It increases the synthesis and secretion of acetylcholine, which helps support cognitive function. Heightened levels of acetylcholine have been linked to memory, mental drive, and REM sleep states.[†]

But there's another very important way to ensure higher levels of acetylcholine. Acetylcholinesterase (AChE) breaks acetylcholine down, so if you want higher levels of acetylcholine, you don't want AChE to be active. Huperzine A is an acetylcholinesterase inhibitor.

By inhibiting AchE, more acetylcholine is made available to the brain. Efficacy has been shown in a range of 200-400 mcg daily.†

Our study not only affirms Alpha BRAIN's effectiveness, but also demonstrates there are tools available to enhance cognitive performance.

We aim to further our research efforts and improve our understanding on how performance of the mind and body can be maximized.†

This is by no means a complete list of everything you can do to optimize your brain health. These are just some of the more powerful ways you can support your brain health.†

It's vital that you check in on your brain from time to time. Ask how it's doing. If something isn't working, tweak it until you get the result you're looking for. What works for you may not work for someone else.

Your chemistry and responses are unique to yourself. You are a living, ever-changing being. What works for you today may not work tomorrow, but the strategies mentioned above are some powerful tools that can help you in your journey to total human optimization.

PRODUCTS FEATURED

1. [Onnit Alpha BRAIN](#)
2. [Onnit Coconut Oil](#)
3. [Onnit Krill Oil](#)

The statements in this book have not been evaluated by the FDA.
The products displayed are not intended to diagnose, treat,
cure, or prevent any disease.