

Get Brain Fit for the Boards

Elizabeth A. Stuller, MD

© Stuller Resettings

Getting Brain Fit for the boards means taking care of your brain physically for maximum performance. Because we can't see our brains, we often forget that it is like a mind muscle that needs nurture and care for maximum output and performance especially during your exams.

Brain training should be considered an important component of your test preparation. Below are some bulleted highlights to keep your brain function at a maximum output. Do not be discouraged if you are not yet doing these things and begin now to make them a part of your daily routine.

- **Congratulate yourself for being in the position you are now to be able to sit for your boards. You have achieved elite status and are close to completing the formal preparation of your graduate school career.**
- **Practice directed focus every day. You will attract what you focus on. Do not catastrophize about the potential for failing; rather adjust your long term focus. Imagine yourself putting the necessary skills and strategies in place which will guarantee a pass and a future in medical physics.**
- **Procrastination in your studies only heightens anxiety. Unhealthy anxiety is a habit. A certain amount of anxiety is necessary for vigilance, attention, and concentration. Use it to your advantage. Again, not studying when you have allotted time means you will feel guilty now or later for not doing the task at hand. Practice my "5 minute" rule. Just get started with the studies. If you can engage for a minimum of at least 5 minutes, you will usually continue the task. Don't be afraid to move your study environment if necessary for maximum concentration away from distractions. Occasionally commit to library time, but stay away from anxious people who may want to procrastinate themselves by talking to you and wasting valuable study time for both of you. Commit to your allotted study time and stick with it. This includes set up time and shut down time. This can often take 30 minutes each to spread out study materials etc. Also pick study times when you are fresh, like early in the morning. Planning to study after work often results in a hectic day followed by less than quality study time and less efficient memory absorption of the material at hand. Remember, if you can study a minimum of 20 minutes every morning when you are fresh, you can maximize performance. Try and do something every day to make it a habit and to minimize anxiety.**
- **Passing your boards is an "acquired skill". By taking this course you have already committed to quality preparation by those who have taken and passed the test before you. Follow their**

suggestions and commit to the material. Don't be afraid to ask for help, especially from your mentors, professors, or medical attendings that have a vested interest in your passing.

- **Advise family and friends that you are in final board preparation so that they can support your study seclusions without interruption. If they forget, remind them of your testing deadline and again ask for support. Most people do not know the mental anxiety, taxing preparation and memorization that goes into board exam preparation.**
- **Your goal should be a "relaxed focus". Practice nightly visualization of your taking and passing your boards in a calm and collected manner. Although you are responsible for a vast amount of material, know that the material will come to you when needed. Again this is the importance of daily preparation even if only 20 minutes daily. This lays down permanent long term pathways of recollection by pure daily exposure. Trust also that your program and teachers have taught you enough to pass the exam. Your responsibility lies in being fresh and ready for the exam after a proper review of all materials.**
- **Hydration is critical to your success. If you are not hydrated you cannot deliver the performance even in the most exsquitely trained athlete. General rule of thumb is to take your body weight, divide by two, and drink this amount in ounces of water daily. Another easy was is to buy a quart size container (32 ou.) and fill it up 3 times a day.**
- **Omega 3's. Low levels of omega 3's called "essential fatty acids" can lead to low concentration, attention, and performance. Omega 3's are long chain fatty acids which boost your memory, decrease cholesterol, triglycerides, heart disease, stroke, high blood pressure, inflammation, and depression. Some studies also suggest that low levels of Omega 3's can heighten symptoms of individuals with Attention Deficit Disorder as it has a calming effect on the brain. Patients also report that this calming of the limbic system also decreases anxiety. Studies have additionally shown that people with low omega -3 fatty acid levels are more likely to attempt suicide, have Alzheimer's, or ADD. Long chain fatty acids also enhance mylination and firing of your neurons for faster mental and physical performance. We often prescribe omega 3's as well for athletes are individuals who have had a prior head injury including sports or motor vehicle accident injuries. Omega 3's help to repair prior brain damage and maximize performance. You should take an average of 2-4 grams of Omega 3's daily. Be sure to get a high quality fish oil. Cheap fish oil often contains contaminants such as mercury which are bad for the brain. Be sure to know the source and quality of your Omega 3 supplements. To avoid contamination, the purest form of Omega 3 is algae based. Visit Brain Armor or Life's DHA at www.martek.com.**
- **Take a multivitamin daily. This is very necessary for essential cofactors to complete amino acid and neurotransmitter metabolism. Often food alone and irregularity in our daily diets do not afford enough of these essential nutrients which are critical to your success. Always take your vitamins with food as they can nausea on an empty stomach. Again, avoid inexpensive vitamins which may have unnatural fillers which are not good for your health. Remember to invest in quality supplements as they are an investment in your brain health.**
- **Eat a high protein, low complex carbohydrate diet. Nuts are a high quality protein boost to your diet and a healthy snack as compared to peanut M&M's. Spinach is over 50 % protein and again**

essential for brain health as a critical protein building block for amino acid and neurotransmitter production and function.

- **Avoid caffeine and drink green tea. Green Tea contains L-Theanine which is a glutamate antagonist. High levels of glutamate from poor diets and stress can cause over excitation and neuron cell death. Green tea is a natural antioxidant.**
- **Eat from the rainbow every day. This does not mean Skittles. Eat blue foods (blueberries), red foods (raspberries, strawberries, red bell peppers), yellow foods, (squash, bananas, peaches), orange foods (oranges, tangerines) green foods, (spinach, peas, broccoli), purple foods (plums, grapes). Colorful foods are usually rich in antioxidants which protect your neurons from committing suicide by apoptosis.**
- **Tuna – is a great source of quick protein and inexpensive. A three pack of tuna is about \$2.50. Again, watch for source and quality of tuna to avoid potential mercury poisoning. Add whole wheat crackers for a little carbohydrate boost. This is much better than the “Happy Meal” which may have over 600 calories.**
- **While working as a resident on long shifts over 24 hours I learned to pack protein shakes as a form of quick clean energy instead of a Dr Pepper at 3 AM. It was additionally calming to my stomach, non –acidic, and loaded with fruits and vegetables. Consider investing in a “Magic Bullet” blender which you can blend, screw on a lid, and throw in your back pack. By 3 pm the following day, my energy and mental clarity were much sharper than colleagues who had a poor overnight diet or late night snacking with pizza and coke.**
- **Optimize your Vitamin D and Thyroid Levels. Abnormal levels of each can contribute to depression, anxiety, and often over eating issues. Low levels of Vitamin D can make you feel hungry all the time because of Vitamin D’s influence on the fat hormone Leptin. Low Vitamin D is also associated with Seasonal Affective Disorder or feeling blue in the winter. Vitamin D is a fat soluble vitamin; therefore serum blood levels must be tested to adjust your dose. Most patients on the Northeast coast tend to be deficient in Vitamin D and report enormous improvement with correction. Thyroid levels should also be tested with a serum blood sample. An overactive thyroid can mimic an anxiety disorder, while an underactive thyroid can mimic a depressive disorder. Low thyroid impairs overall cerebral blood flow and can impair your thinking and judgment. So get this fixed. It’s like looking under the hood of your car and topping off low levels of battery fluids and windshield wiper fluid.**

Serum Levels of Vitamin D

Low : <30

Optimal: 30-60

High: >100

- **Natural Stimulants include Gingko Biloba (see Dr. Amen’s Brain and Memory Boost), or L-Tyrosine Spray which contains the liposomal form of L-Tyrosine the natural amino acid precursor to**

Norepinephrine and Dopamine, important neurotransmitters for the pre frontal cortex for increased attention and concentration.

- **Natural Calming supplements include Kavinase (GABA plus Taurine) which are calming amino acids or Valerian, Kava kava for a quick night's sleep before the morning of a big presentation without AM sedation. Always experiment with these prior to an actual test condition so you know exactly the duration and quality of sleep with each. Then pick the one that is best for you.**
- **Pick a conducive study environment free of distractions. Don't be afraid to change study environments if you find that you cannot maintain concentration in your current location. For example, if you have guest in the home over the weekend, get up early and commit study time at the library where you can study without distraction and will be less tempted to join in the fun from family or friends who innocently try to lure you away from your studies.**
- **Exercise. Commit to 10-20 minutes a day. A little is better than none. Exercise releases your natural endorphins such as Norepinephrine, Serotonin, and Dopamine giving you a natural high and increased cerebral blood perfusion for maximum performance, concentration, and attention. Exercise enhances your mood and decreases depression. Pick something you like. Often sparring with a punching bag for 10 minutes is also a nice way to get the "ya-ya's" out or aggressive energy.**
- **Practice deep belly breathing. Check out heartmath.com for portable computer or hand held devices which give you instant biofeedback on your breathing and cardiac heart rate variability. You can often see professional athletes, for example, football kickers, using these devices on the sidelines before a potential goal winning kick to decrease anxiety and get into the zone quickly. Notice your breathing patterns while taking test. Often we slump our shoulders and begin shallow breathing especially when anxious making us feel lightheaded, and panicky. Again "proper breathing" is an acquired skill. It takes practice to recognize your pattern and put breathing exercises in place when stressed to properly oxygenate the brain. Even if you take mini study breaks, lay on the floor on you back and open up your arms allowing your chest to open up and release tension in your neck and shoulders. Take mini breathing breaks to restore yourself.**
- **Don't be tempted to self medicate with illicit drugs or alcohol. In addition to cannabis decreasing blood flow to your Prefrontal Cortex and Temporal Lobes where executive function, follow through, attention and concentration and memory reside respectively, you run the risk of being arrested for an illegal activity. Cannabis can impair your judgment and ruin your career. Remember most Hospital and University Credentialing do background checks looking for prior drug or alcohol problems. Don't put yourself in harm's way and protect your brain from drugs and alcohol. Having seen many SPECT scans in substance abusers, I can assure you that harm is done and performance impaired. If you smoke pot for sleep, see a physician for a sleep study or proper recommendations for sleep hygiene, herbal supplements, and medication if necessary. Smoking pot for sleep is never a good excuse. Don't kid yourself.**
- **Sleep is critical to your success. You need a minimum of 7 hours of sleep per night. Studies show that individuals with less than 7 hours of sleep per night suffer decreased cerebral blood flow and impaired cognition function. Some studies have compared lack of sleep and cognitive impairment to be similar to someone who is drinking during the day. Sleep hygiene is a word for sleep "habits" which much be formed. Don't sleep with a TV in your room. Get in bed when you are ready for**

sleep. Try to eliminate have family pets in bed with you. Pet can be very disruptive to good sleep. Don't exercise late in the evening. Drink warm milk or herbal tea. Avoid the news are toxic relationships before you go to sleep. Try to wind down towards the end of the day. Cramming for test the night before is foolish and impairs your performance on the day of the exam. The best students get proper rest and sleep before their big exams.

- Practice Focused Visualization and Meditation. Imagine yourself taking your exam in a calm and collected manner. Imagine the information flowing to you effortlessly while you maintain a steady pace throughout the exam. Trust that the words will come to you during the oral exams. See yourself at the mailbox leaping with joy and hoisting your passing exam into the air and calling friends and family. If you get a flash of a fail or the racecar crashing into the wall, acknowledge the fear, but practice coming out of the spin to regain control and finishing the exam. Positive thinking on SPECT studies have showed increased perfusion versus those who practice negative thinking, which cause decreased blood flow especially in the cerebellum and prefrontal cortex.
- If you find yourself getting anxious, you are probably too far in the past or the future. Quickly return to the present moment. Practice being in the here and now. Take one minute at a time, then one hour, and then one day. Worry is wasted energy. Keep your eyes on the task at hand. Relax and remind yourself that you are in control. Take slow deep breaths. Don't think about the fear; think about the next step and the next task. Think positive and use self affirming words. Expect some anxiety; this is normal for attention and concentration. Just keep it manageable. Anxiety can be a habit, but can also be a tool for success if applied appropriately. Remember what has worked in the past during your best test taking performances and hold on to these strategies. They are your building blocks to success. Celebrate that you are on the road to overcoming the obstacle. Studying and Practicing helps to increase confidence and decrease anxiety. Studying every day means not having to cram in the hours, days, and weeks before the exam. Make study a daily habit while incorporating your brain healthy habits. Remember good brain health and passing board exams is an acquired skill.

Suggested Readings:

[The Amen Solution](#), by Daniel Amen, MD.

[Healing ADD](#), by Daniel Amen, MD

[How to Get Out of Your Own Way](#), by Daniel Amen, MD

[Loving What Is](#), by Katie Byron

