

B1C - Train the brain for optimal focus and performance

What is Stress?

4 primal challenges warrant a stress response.

- Fighting
- Fleeing
- Feeding
- Fornicating

Stress is designed to teach the body new things and help it learn.

Stress should be followed by,

Rest and Recovery, which aids the body in
Learning and Growing

Chronic stress is highlighted by the inability to rest and recovery. Therefore there is no growth, but rather continued deterioration.

What is Resilience?

- The opposite of depression
- It is the ability to adapt positively to past or current adversity
- Influenced by a number of factors:

Factors affecting Resilience

Nutrition	By providing the right environment and raw materials for your brain through good nutrition, it handles stress better. If you then give it the right fuel, you will be thinking faster and clearer than without that fuel.
Exercise	When you exercise it gives your brain training at dealing with stress. Exercise is a little stress, so

	when it gets emotionally stressed for real, the work you have done will reduce the impact of it.
Sleep	The amount of sleep you get provides: Brain rest and recovery, the ability to consolidate memories and learnings, and allows the brain to clear away the junk, effectively taking out metabolic waste.
Other factors	Head space, emotional state, goal setting and the environment

The ‘See~Saw’ of Stress and Rational thinking

Your brain can only do one thing at a time...

Stress and get anxious OR think rationally

When the brain is under stress it tends to develop thoughts and actions from the amygdala, which is pure emotion and protection.

When you start to *think* about what emotion you are feeling, it becomes a more rational process, so the intensity of the emotions decrease and are replaced with thoughts, rather than feelings.

The Resilience of you and your brain enables you to maintain better control over your emotions, so that you deal with things more calmly, experience less stress and get better results working with people, or on your own work.

Fatigue and Resilience

When the brain gets tired, just like a muscle it doesn't work as well.

It's highest functions don't operate as effectively.

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Memory, concentration, mood, focus, agility and emotional regulation are all adversely affected.

Exercise, Nutrition and Sleep are 3 critical factors to ensuring your brain is in the best shape possible at every step.

Exercise & Resilience

The sign of a fit brain is the following:

- Responds quickly to errors or stress
- Regulates the emotion around that stress effectively
- Quickly calculates how to best correct the error or deal with the stress

How does exercise build resilience?

1. Physical resilience

a. Stress response training

- i. When your body exercises, it creates a small stress on your brain tissue.
- ii. This stress is caused by an increase in cortisol
- iii. Your brain cells, like a muscle in training become tougher against cortisol after being exposed to it during exercise.
- iv. The next time your brain is exposed to cortisol, it handles it better, because it has trained for it.

b. Increased volume of important brain tissues

- i. When you exercise you release a chemical called BDNF. This stimulates new brain cells to grow. It also protects old brain cells and is important in making happy hormones in your brain.
- ii. People who are fitter, particularly as they age, have thicker pre-frontal cortices, and have a larger hippocampus. 2 essential components of rational thinking and stress regulation.

2. Psychological Resilience

- a. When you exercise you release dopamine. Dopamine increases the feeling of reward in your brain, and makes your brain more responsive to rewards generally.

- b. When you feel more rewarded you have a lower requirement to seek that reward through other people and foods. Typically, fitter people are able to control their emotions, dietary choices and motivation more effectively than unfit people.
- c. Getting through a workout requires resilience. To finish a race, or a tough set requires mental toughness. Practising this toughness of completion in exercise trains the brain to be able to perform it better when it comes to the crunch at work, or with family.

Nutrition & Resilience

Job #1 - Nourish and decrease inflammation

How do we know if a food is good for the brain?

It inspires growth and improved function!

Hydration - the first port of call for brain function...

The brain is built on hydration.

Being dehydrated makes your brain use more energy for the same task, compared to when it is well hydrated.

Just adding water to your daily routine will make a huge difference to your ability to focus, be more resilient and perform at a higher levels for longer.

What foods inspire growth?

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Foods that decrease inflammation allow the body to rest and recover.

Food or Nutrient		
Omega-3 fatty acids	Forms a large percentage of the fats contained in the cell membrane. Provides anti-inflammatory assistance May help support neurogenesis	
Green leafy vegetables and brightly coloured fruits	Provide Lutein and Zeaxanthin - make up 66-77% of total carotenoid concentrations in brain tissue. Anti-inflammatory Brain content has been related to global cognition, retention.	
Saturated fat	May accelerate cognitive decline in humans May contribute to greater insulin resistance	
Specific vitamins tested	B6, B12 & Folate - Memory and general cognition in the elderly D - Preservation of cognition in elderly Vitamin E - May protect cognitive decay in elderly	
Specific phytonutrients	Curcumin (Turmeric) - may delay cog decline in elderly Flavonoids (Quercetin & -epicatechin- improved cognitive function in elderly	
Combined nutrients	Omega-3 and Lutein combined may work synergistically to improve verbal fluency, memory and rate of learning.	
Alcohol	The more alcohol consumed, the lower the total brain volume	
The Mediterranean Diet	Vegetables, fruit, legumes, fish, low fat dairy, wholegrain choices, plenty of olive oil, limited processed foods - has been shown to reduce depression and improve levels of BDNF in the brain	

Job #2 - Fuel the brain and create the neurotransmitters

The brain, just like any muscle, needs the right fuel at the right time, in the right dose.

Combining this fuelling with the right nutrients to create dopamine, noradrenaline and serotonin is critical to feeling your best and most functional.

Decision Fatigue

Your pre-frontal cortex is the one making all the tough decisions.

- When it runs out of fuel, so does your ability to regulate emotions and think clearly.
- Providing the right fuel after a busy day can significantly boost your brain power in the short term
- Combining protein and carbohydrates at the right time through the day improves focus and reduces distractions.

30g of carbs will restore a large chunk your emotional regulation and decision making

Focus and attention

Very simply - Have Breakfast - it will thoroughly increase your function in the morning

- Some research suggests that any breakfast is better than no breakfast
- A healthy breakfast is likely to be better than an unhealthy breakfast
- There is some evidence indicating that a higher protein breakfast (a ratio of 1:1 with carbs) is a little more beneficial than the standard high carb cereal.

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- This might be related to dopamine and decreasing distractions by feeling more rewarded.

Sleep & Resilience

People need to sleep - for about a third of their life!

Get enough to function well

Research indicates that sleep amount and mental function (health for that matter is like an inverted U)

Less than 6 hours = Increased risk of accident and illness

6 to 8.5 hours = Most optimal amount for a nightly sleep (but find your own sweet spot)

More than 8.5 hours = increased risk of accident and illness

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Sleep Basics

- If you deprive yourself of sleep, i.e. <6 hours, it takes 3 to 4 days for you to start functioning more poorly.
- It may take longer than this to recoup the loss once you start getting more sleep again
- Banking sleep can be beneficial if you know you have a big week coming up
- Splitting sleep and still getting 8 hours per day may be enough to sustain good performance

Napping

- Getting 10-45 minutes of sleep during the day can improve performance by up to 30% for the 3 hours following the nap
 - Very useful when you are tired and underslept
- Can be combined with exercise and nutrition to give you a sharp improvement in your attention and focus.
- It's important not to go too deep into sleep, and finding the right amount for you is important.

Sleep Hygiene

- Try to eliminate bright lights for 45 to 60min before bed
- Do something less mentally stimulating than being on a device, watching an action movie.
 - Make a regular bed time
 - Make this bed time a priority for your health