

# BIOHACKERS

MAGAZINE

EXCLUSIVE INTERVIEW

With Our COO,

**JEAN FALLACARA**

Serial Entrepreneur,  
Scientist, Athlete and  
Creator of Cyborggainz

## NOURISH THE MIND

**THE POSITIVE FEEDBACK LOOP:** USING KNOWLEDGE FOR PEAK PERFORMANCE,  
AND PEAK PERFORMANCE FOR OPTIMAL COGNITION

Also In Our **'BRAIN-POWER'** Special Edition:

- PERFECTIONISM AND YOUR HEALTH
- DYNAMIC DYSLEXIC HACKS
- NAVY SEALS AND STRESS
- AND MUCH MORE!

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OCTOBER 2021



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## Our Categories

Our categories bring you quality content in a clear, swift order, based off pure simplicity and experience.

Outer – This branch contains concise and ‘to the point’ articles that just touch the surface of what biohacking is as a subject while relating to everyday life and how biohacking fits in.

Inner - This category takes a deeper and more scientific approach to biohacking. These articles focus on a more scientific and analytical theme of biohacking, breaking down more of the whys and hows behind it all.

Core – Within this sphere lie many specific and perhaps relatively new biohacking articles, all backed by science and studies, many of which are written by experts in their relative field. These articles bring it all back to the big WHY behind biohacking while connecting it to all the facts.

A hand is shown in silhouette, holding a glowing, wireframe brain. The brain is surrounded by a network of white lines and dots, suggesting neural connections or data. The background is a sunset with a bright sun low on the horizon, creating a warm, orange glow. The overall image conveys themes of technology, neuroscience, and human potential.

# MESSAGES FROM OUR BIOHACKING TEAM

# A LETTER FROM THE EDITOR

There's nothing quite like the feeling of a clear mind. Clarity can never be taken for granted. We've all suffered moments in our life when our mind felt clouded, inefficient, sluggish. As biohackers, we know how important it is to have a clear mind is and how it affects every other aspect of our life. Our mind is where we hold our foundations of knowledge, and also where we build on it. There are aspects of the body, mind and spirit triangle found in countless dogmas, ideologies, philosophies and the such, over the course of human history. Spirit guides us and acts through our body. Our Mind is where we can receive what the world is showing us, actively or passively, and apply this learned knowledge to serve our spirit in a mutually beneficial way towards growth. Because of this, it cannot be overstated enough that what we put into our minds, passively or actively, has a correlative impact on where we are going in our lives. Its easy to let the world shape our mind. The more difficult path is a narrow one, and involves choosing, each and every day to be the gatekeeper of what enters your mind. Awareness is the shield of any great student of life; without it, we become subject to the vast thoughts of destruction that eat away at and destroy the mind, leaving us feeling lost and in despair.

The way to high road is acting as an always alert and aware sentry to your mind's gate, only allowing thoughts, ideas, and other inputs that relate to creation and life. It all starts in the mind. The battle can go on for what feels like forever, but the battle is lost or won in the mind. Put your attention there and rest assured that you will be well-equipped and prepared to handle the toughest of obstacles that life and the world throws your way. Don't ask for your life to be easy, ask for you to be better, to be stronger, and to be WISER to tackle and overcome all of the learning experiences. When we see what happens to us in life as an adventure, full of unpredictable events and experiences that forge our armor to be more effective, we go into battle with a clear and set mindset - To come out on top and wiser, after all the ashes of the battlefield fall. To loves wisdom, we must first become aware of what contributes and what attacks our wisdom. Make your mind aware and walk confidently into each challenge life presents you.

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## ABOUT DALLAS MCCLAIN

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Born in the USA, Dallas is a passionate reader of personal development books and a tennis enthusiast. He is the Chief Financial Officer and Editor of Biohackers Update Magazine and the co-founder. He holds a bachelor's degree in Biological Sciences, as well as a TEFL level 5 certificate in teaching

English. He is currently living in Orlando, Florida with his wife and daughter where he enjoys writing, sports, and nature hikes in his free time. Dallas can best be reached at his email:  
[dallas.biohackersupdate.com@gmail.com](mailto:dallas.biohackersupdate.com@gmail.com)

# A MESSAGE FROM COO JEAN FALLACARA

Is science the solution to everything?

Where should humankind invest its resources and why?

I think we should start by simply being kind to others.

This is the best yet simplest biohack, with

lasting effects on our mental and physical health.

Kindness lights up the pleasure center of the brain and releases serotonin and oxytocin.

We humans have been using technology and artificial elements to alter our lives from the day we climbed out of the primordial ooze...

But What If we started everything back again, with more awareness and kindness...

--[Jean Fallacara](#)



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## ABOUT JEAN FALLACARA

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Born in France, Jean is an athlete, entrepreneur, scientist, public speaker and an Art collector. He is the founder and CEO of Cyborggainz, the Managing Director at inTEST Corporation and the COO of Biohackers Update Magazine. He is also the author of “Neuroscience Calisthenics: Hijack your Body Clock.” Jean holds a bachelor’s degree in biochemistry, a master’s degree

in immunology and genetics, and an engineering degree in biotechnology. He has also studied neurosciences and brain functionalities, and law and finances. He is currently living in Montreal, Quebec with his family where he uses his 20+ years of experience as a business executive.

Website: [cyborggainz.com](http://cyborggainz.com)

— OUTER

***“We are all connected;  
To each other,  
biologically. To the  
earth, chemically. To  
the rest of the universe  
atomically.”***

***— Neil DeGrasse Tyson***



**BIOHACKERS**  
UPDATE MAGAZINE



# CORTISOL, STRESS AND WHY WE SHOULD BE GRATEFUL FOR IT

Our body functions with the use of an internal clock, guiding our habits, our actions kind of setting up a frame for your personality and identity. Most aspects of our behaviour both mentally and physically rely on the proper functioning of the body's circadian clock: a 24H hour circadian release of hormones and neurotransmitters that help us to the best ability to be a good functioning human. Without even realizing it, we all are extremely dependent on this internal clock for our well being so when something disrupts it, it's not a pretty sight.

The brain sends direct signals to the body, allowing the release of necessary hormones or neurotransmitters etc... In the morning, a boost of cortisol that we get naturally from our

surrounding environment comes in acting as our own personal alarm system, built in mainly to keep us alive and to convince us to stay out of dangerous experiences. The crucial point is that all hormone release actually relies on the interconnected activity of clocks in more than one part of the brain. Cortisol is much more than the typical stress hormone involved in fight or flight and it gets a bad rep for that sinking stomach feeling we get when we feel we are in danger. It's true cortisol, when mismanaged or wrongfully released can be a real pain, leading to anxiety disorders, depression etc... In fact, when a hormone release is disrupted, it leads to numerous pathologies. The stress itself of waking up and preparing for the day is one of the biggest regulator stressors to the body, and if not managed well can ruin your mood for the rest of day. To avoid such



mistral actions of hormones, do not neglect your sleep! On top of that, don't neglect your waking up process! We all know how comforting that snooze button is but we're just not aware of how much it disrupts the routine our body clocks highly rely on.

Stress management gives you a range of tools to help you rest your broken alarm system in order to help you lead a happier life. No matter how amazing the stress management techniques are, you will never be able to live a fully stress free life, and if you can, you might as well die from boredom already. A little bit like the yin and yang, we often find "negative" qualities in the positive things and in terms of stress, that is very true. Someone that is successful, with a happy family living the dream life, did not get there through refusing to leave their comfort zone out of fear of being stressed. Cortisol helped him achieve his goals in a safe and beneficial way!

There are a couple ways to limit anxiety. Notice how I did not say "get rid"? Without a healthy occasional dose of stress, the truth is we probably would've all already been dead by now. Our life and our talent at staying out of trouble, it's not us that we have to thank, but

cortisol. In order to limit stress, practice mindfulness or other activities of the sort, forcing your mind almost in a relaxed state. Exercise and exposure to sunlight is also a huge one, as releasing a bunch of serotonin in your body will greatly help to make that sensation of stress feel a lot less unbeatable. A quick little tip that has been proven effective is actually the act of chewing gum. I personally recommend combining it with mindfulness practices in order to deeply calm yourself.

All in all, cortisol is not the enemy, it's just a friend that sometimes, when shaken up, gets too much. Your goal should never be to get rid of stress altogether, it is necessary for our survival just as much as water and food arguably so. The goal is to healthily manage it with tips and tricks that work for you and if it becomes too much all the time, to know when it is time to seek help. Fall is the season of mental health concerning mood and affective disorders, shining a spotlight on much too common diseases like anxiety and depression and I'd like to use this post to encourage everyone to figure out where they stand in the case of stress: overbearing? Alright? Impossible to live with? Each situation is different and most of our body clocks are completely dismantled. Let's get it ticking properly again.

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#### ABOUT NOEE MATHILDA SPIEGEL

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Noee Mathilda Spiedel is a published reporter, in charge of research. She writes or reviews most articles and reports on information.





# DYNAMIC DYSLEXIC HACKS

You might have heard about it, but you may not know much, as it is not very often discussed but Dyslexia is a problem! Studies have suggested, a small portion of the population suffers from it worldwide, in the US itself, 5-10% of the population is affected by it.

## What is dyslexia?

The word dyslexia, like most words, is derived from 2 Greek words, “Dys” meaning difficult and “Lexis” meaning word or language. Put them together and you will get the gist but it is much more.

Originally the condition, dyslexia was termed as “Reading Blindness” and, although there is much to do with reading, it also involves difficulty in manipulating sounds and letters of languages.

Dyslexia is genetic and it is very likely that your parents or siblings have it if you do too. It affects people from all places, ages, and gender. Some symptoms can be

- Late talking
- Learning new words slowly

- Problems forming words correctly, such as reversing sounds in words or confusing words that sound alike
- Problems remembering or naming letters, numbers, and colors
- Reading well below the expected level for age
- Problems processing and understanding what he or she hears
- Difficulty finding the right word or forming answers to questions
- Problems remembering the sequence of things
- Inability to sound out the pronunciation of an unfamiliar word
- Difficulty spelling
- Spending an unusually long-time completing tasks that involve reading or writing
- Avoiding activities that involve reading
- Mispronouncing names or words, or problems retrieving words
- Trouble understanding jokes or expressions that have a meaning not easily understood from the specific words

(idioms), such as “piece of cake” meaning “easy”

So why should you care?

As someone who has Dyslexia, as a kid, I sometimes wanted the world to be a bit nicer. Most often I didn't know what was happening or why?

I was below an average student but always wanted to do better.

Considering how many people this condition affects, there is a good chance that you know someone with dyslexia.

Dyslexia can go undetected - I found out in my early twenties, it can cause frustration in students and manifest in drug abuse, depression, and other behavioral problems.

[A study shows](#) that 48% inmates in Texas prison were Dyslexic.

All was going well for dyslexics, until the Industrial revolution came along and knowledge was no longer imparted as an on-job apprenticeship, but rather in the form of books. For the general population, it was an easy and convenient way to learn, however for someone with dyslexia, it is a nightmare, especially if they don't know that they have dyslexia. Peers learn things faster and were ahead, which gives a sense of being inadequate and lesser.

### **What to do?**

Think of a world where you are constantly reminded as being below-average, to no fault of your own. You try to learn but have a challenging time because you don't understand the language, and without someone to guide you or tell you what's wrong, you feel like you are, stupid, inadequate, less intelligent. As a child, these are some very bad feelings that can nudge a person into the wrong path.

Truth be told, Dyslexia is not a gift, being unique is not always as fun as everyone makes it sound. Although

there are many people with dyslexia who have gone on to be very successful, not everyone is that lucky.

Unfortunately, most of the time it will go undetected and the child will be labeled as disinterested in studies or straight-up stupid.

There is not much anyone can do in case of dyslexia, there are alternative ways of teaching and therapy but it is not an illness. To be honest, I sometimes feel life would have been very boring if I didn't have it. But still, if you see someone with symptoms of dyslexia, ask them to see a doctor or get tested. Believe me, you would be changing the course of someone's life.

There are some things to try and implement into your daily routine to help relieve these symptoms of dyslexia.

- Use speech-to-text apps and software so you don't have to write or type everything
- Record your meetings or lectures to hear again later
- Incorporate brain and reading exercises into your day to help improve your cognitive and reading skills
- One [study](#) showed that dyslexics actually improved when pushed to read faster.
- Record your thoughts and frustrations with a recording device daily. Instead of writing in a journal, you can let your thoughts out of your head and allow your mind to think more clearly.
- Meditate and reflect on words/sentences you may have struggled with lately and while practicing self-love, also try to rearrange these words in your mind, exercising control over what you see inside yourself.

# BIOHACKERS MAGAZINE ~BIOHACKING CONGRESS GIVEAWAY~

ENTER FOR YOUR CHANCE TO  
WIN ONE THESE THREE PRIZES:

## 1ST PLACE:

BrainTap headset w/1 year Power User  
- \$1000 Value!

The first place winner will be chosen based off the comment with the highest number of likes on our post.

## 2ND PLACE:

Large canister of ENERGYbits spirulina  
AND RECOVERYbits chlorella  
- \$300 Value!

The second place winner will be chosen based off the funniest comment on our post.

## 3RD PLACE:

2 free on-line courses @ [nuerocarepro.com](http://nuerocarepro.com)  
- \$300 Value!

The third place winner will be chosen based off the most innovative or intriguing comment on our post.

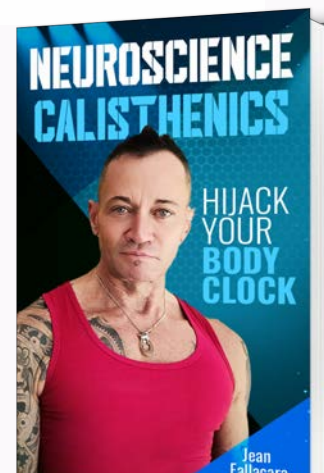
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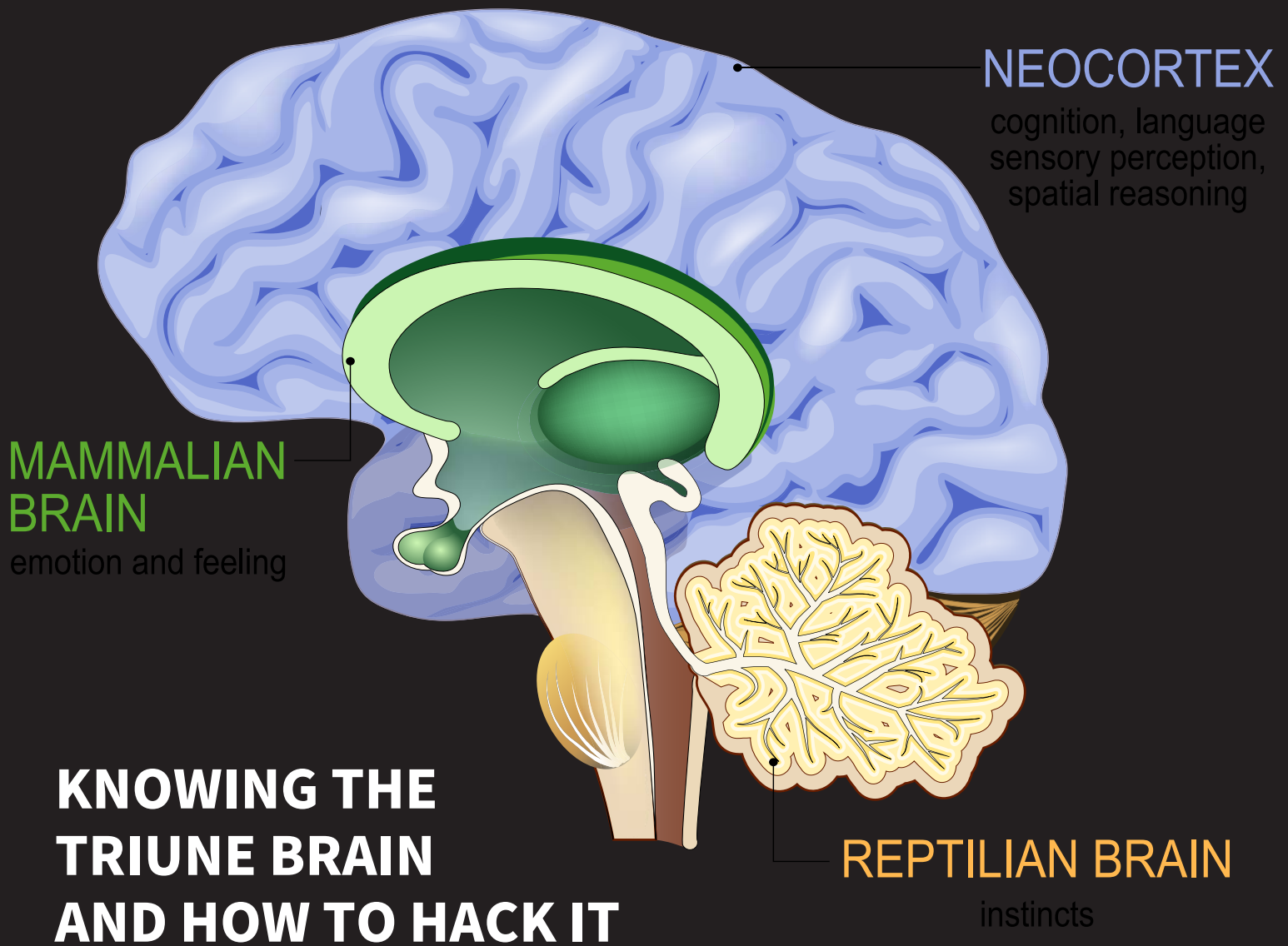
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### Bonus Prize

A signed copy of Jean Fallara's latest book, [Neuroscience Calisthenics](#) will be gifted to the user with the highest comment letter/character count. (No Gibberish, it must have meaning!)





# KNOWING THE TRIUNE BRAIN AND HOW TO HACK IT

Are you the same person you were 5 years ago?  
 Let's talk about a year ago? When the pandemic started and all that was normal was not anymore?  
 We changed, or rather adapted to the new normal, a special quality of humans, we adapt to situations, environments, all thanks to our brains. Our intellect is different from the plant and animal kingdom, in that we can think rationally. We acquire knowledge, just to acquire knowledge. We learn so we can use this knowledge and then learn more. It's a means as an end in other words. Although we are quite flawed physically in relation to most of the animal kingdom, our intellect has assisted us in providing ideas and the ability to

make tools, in order to adapt to the world.  
 So what is the human brain? And how is it so adaptive?

## The Triune Brain

The human brain is highly complicated, proposed by the American physician and neuroscientist Paul D. MacLean, the concept of the Triune Brain concept suggests that 3 brain systems control your behaviors.

### 1. Reptilian complex

Often called "The Lizard Brain" by mainstream media, this is the part of the brain that has similar wiring as a lizard or any

old creature that walks the planet. The Basal ganglia is the system involved in the regulatory functions, body temperature regulation, monitoring blood glucose level, and releasing hormones. Its also involved in aggression, dominance, territoriality, and ritual behavior.

## 2. Paleomammalian complex

This system of the brain consists of the septum, amygdalae, hypothalamus, hippocampal complex, and cingulate cortex, also known as the “limbic system”, the emotional part of the brain, (a mammalian specialty). This part of the brain is associated with, fear, anxiety, arousal, feeding, reproductive behavior, and parental behavior.

## 3. Neomammalian complex

The most recently evolved part of the brain, found uniquely in the higher mammals, contains the cerebral neocortex responsible for perception, planning, impulse control and language skills.

All three systems sit on top of the other, with the Reptilian complex at the bottom. Functionally there is a simplistic flow of command, meaning one system can influence the function of the other. For example, the limbic system can activate the reptilian brain as an emotional response to a situation rather than a stress response.

Likewise, the Cortex can activate the Limbic system to respond to a video, a response to something you are watching that is not there or cannot otherwise influence you.

But the connection goes both ways, your Reptilian brain can activate your Cortex, for example, you can visibly see changes in behaviors when people are hungry. Or the Limbic system taking over the cortex, as your emotions getting the better of your judgment or when you are under stress and make unwise decisions.

### What is trauma?

You might think how did we get from brain systems that

regulate our behavior to Trauma? But here is the thing, it is related. For what is trauma but a response or change in behavior from the brain?

But before any of that we need to understand that there is a difference between trauma and stress, it is very easy to confuse one from the other. Life, in general, is not always pleasant, no matter how positive your mindset is, there are bound to be unpleasant movements in life, causing stress. Everyone, around the world, experiences it on a regular basis. Trauma is caused by something unusual or out of the normal experience. An experience that upset you so much that it overwhelmed you. However, trauma is not the experience or event itself but how you respond to it.

It begins with what happened to you and spirals down to changing your brain, neural connections, and responses. The feeling of threat, unsafety, makes the “Reptilian brain” take over, causing a fight or flight response or sometimes causing the brain to shut down.

The “Reptilian brain” overwhelms the other systems and you go into survival mode, making you fearful, agitated, aggressive all the while imparting your perception, emotional response, and higher thinking. You are not able to engage or learn, see others’ points of view, or coordinate your feelings with your thinking. It can be very hard for traumatized people to experience joy or pleasure.

### What does trauma do to you?

Trauma most often activates the reptilian brain, the part of the brain that influences the survival behavior or the most primal behavior. You don’t feel safe so, your brain forces your body to enter survival mode. The core issue is with the hormones that are released by your brain, these changes can have long-term problems. The physical problems are longer lasting than the mental problems.

### How to reverse Trauma?

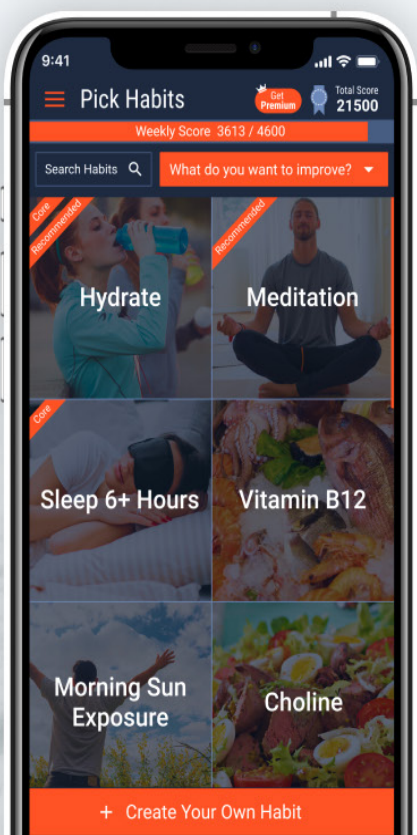
There are many different types of trauma and each one has its own methods for getting past it but lets review below

some of the best all-around methods for helping one heal from a traumatic injury in general, whether it be physical, emotional, psychological, etc:

1. **Exercise and Movement** - Get up and get the blood flowing. This will help repair any bodily injuries and nervous tissues. Do any movement/exercise within reason and always discuss with a health care profession what your limits should be before attempting any exercise that could prove too strenuous for your level of trauma, at least at first. Start small with just 10 minutes a day and see how you feel.
2. **Photobiomodulation /Light therapy** - These tools use LEDs, laser, etc. to help your body heal faster. There have been many clinical studies showing that it can help you maximize your body's blood flow, thus helping get nutrients to your body's structures effectively and efficiently. Their have been many claims of reduced pain and quick healing by users as well as secondary effects such as disappearance of lifetime eczema, or mental clarity throughout the entire day.
3. **Social Connections** - We were made to connect with one another. Man is a social being and when we understand that, we can just look back on

community and civilizations play a integral part in our progression and continual advancement. Communicate with someone who may have had the same trauma as you, or even a different trauma as you. Gathering perspectives in one way in which one can come to understand something a little better with a clearer, full picture. And understanding our trauma and how it fits in it others and the world around us, is a crucial step towards overcoming it.

4. **Sleep** - Prioritize your sleep because this is when our body can capitalize on its recovery process. Take a nap during the day in addition to full 7/8-hour sleeps at night. Be sure to avoid sleep disrupters like alcohol, caffeine or blue light a few hours before beginning your sleep routine. Speaking of routine, try to wind down for bed and give yourself some cognitive tasks that will help your brain ease steadily into the recovery state, priming it for rest and sleep. Meditation, Soft Yoga, Reading, Chess, etc. All of these and more can help you prepare your body for the best sleep. The best part is that the more you practice these habits, the more your brain will adapt and start to associate the behaviors as stimulants for initiating its calmness, relaxation, and recovery process, which will lead to a more restful and constant sleep cycle.

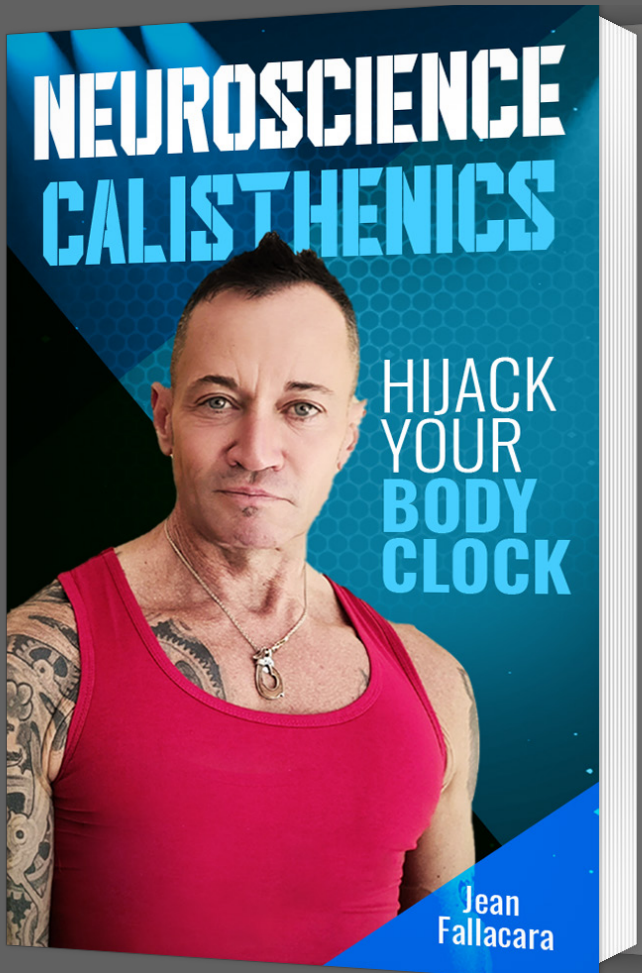


# BUILD YOUR PERFECT BIOHACKING ROUTINE &



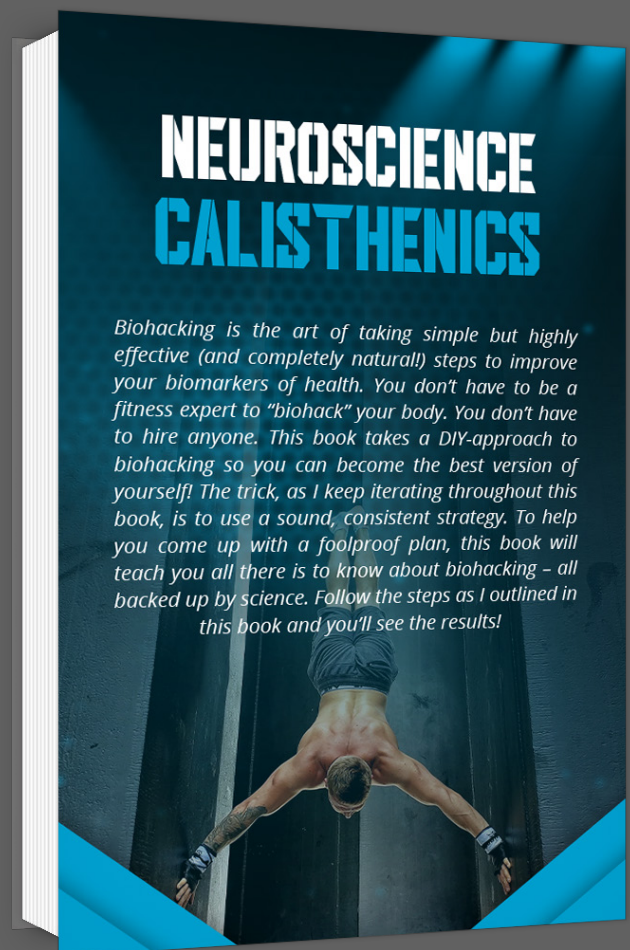
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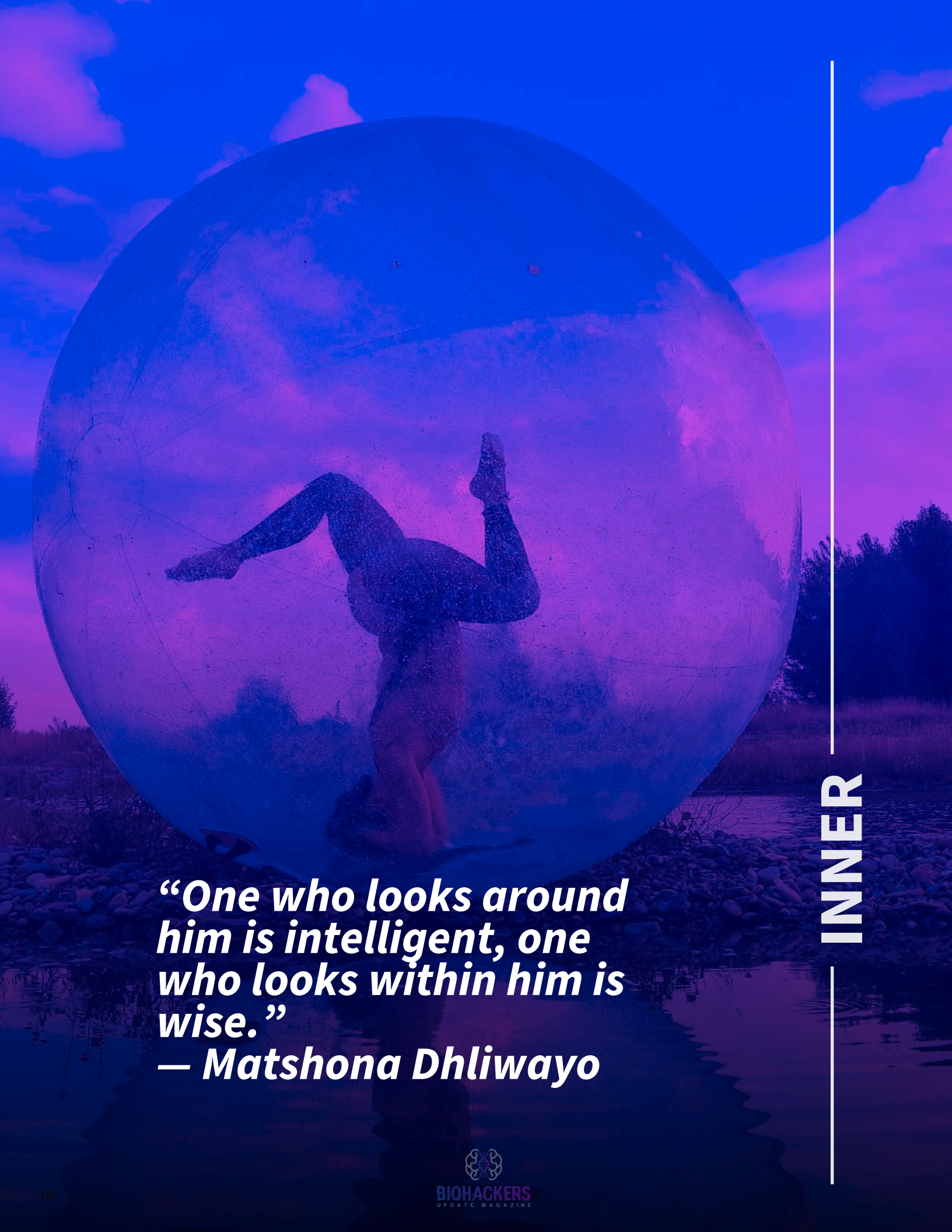


# UNDERSTAND THE NEUROBIOLOGICAL EFFECTS OF YOUR TRAINING

LEARN ABOUT IT HERE!



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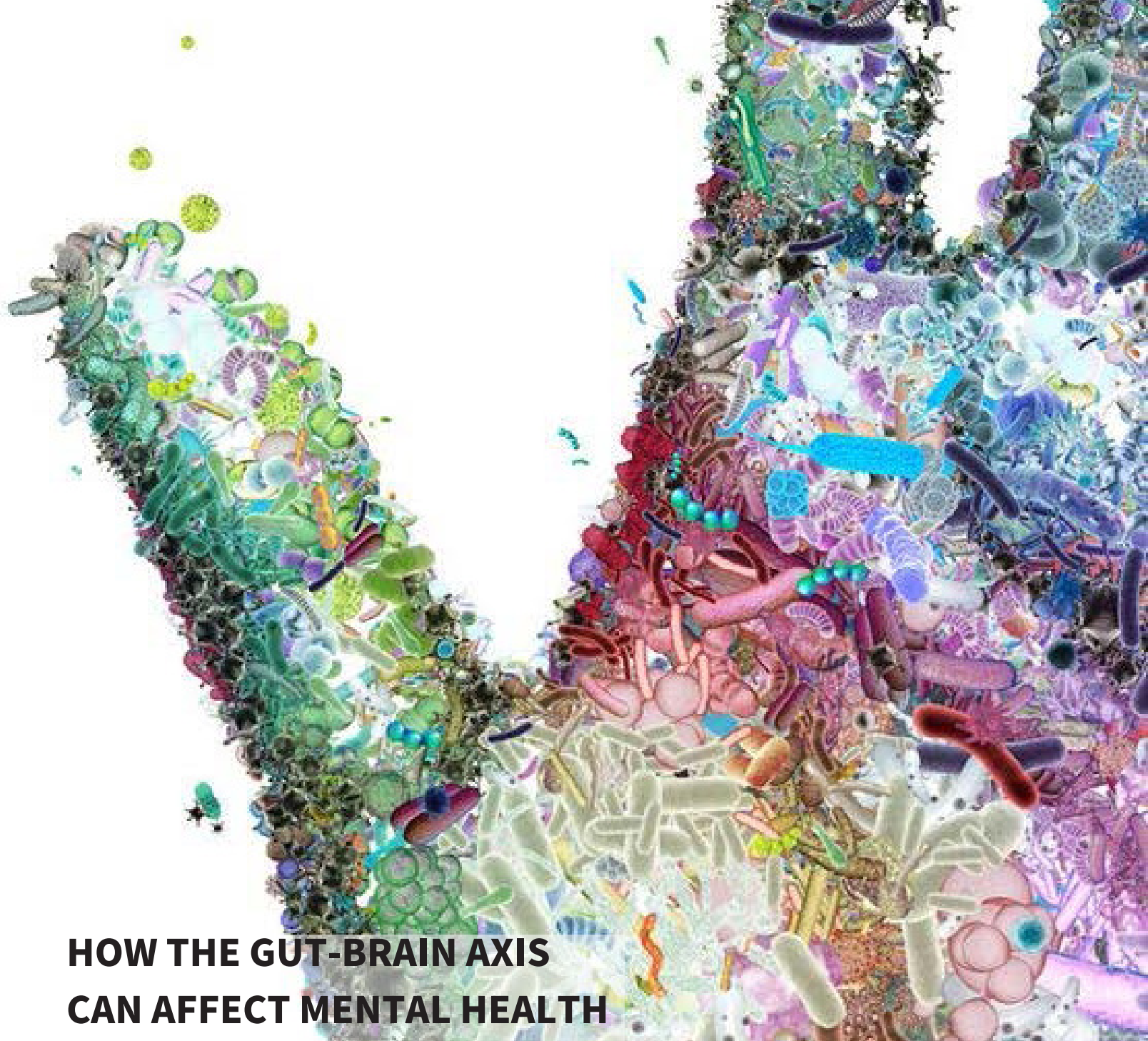


***“One who looks around  
him is intelligent, one  
who looks within him is  
wise.”***

***— Matshona Dhliwayo***







## HOW THE GUT-BRAIN AXIS CAN AFFECT MENTAL HEALTH

Trillions of microorganisms work together daily to make up the sentient beings that we are, but what happens when things start to go wrong?

The human body is a complex super-organism made up of an intricate relationship between human and microbial cells. Each of us has our unique microbiome that lives on and inside our body- known as our microbial fingerprint. Although assembled at birth, our microbiome is constantly evolving. We could even say that it is our 'second self'.

Currently, we are at the tipping point in our understanding of the microbiome. We know that the microbes we give a home play a critical role in the vital homeostatic mechanisms throughout the body and that diversity is key. However, we still do not understand the complete picture. Nevertheless, present research indicates that any new treatment being developed surrounding the microbiome could change the paradigm of certain illnesses and promote better health and wellness.

The concept of the gut-brain axis is derived from the



*“All disease begins in the gut”  
-Hippocrates*

intestinal microbiota's influence on our neuro-endocrine-immune pathways. Our microbiota secretes many kinds of neurotransmitters which are active molecules - meaning these secretaries have the ability to regulate nerve signals and can affect neuropsychiatric parameters such as sleep, appetite, mood and cognition. The vagus nerve enables the primary connection between the brain and intestinal tract - controlling the intrinsic neural system made up of 200-600 million neurones.

So, where do things start to go wrong? Well, there are two objectives to consider when analysing the 'chicken-and-egg gut paradox. Firstly, do our habits influence our gut microbiome, which then goes on to harm our mental health? Or, do our microbes already have a stronghold on our mental health, which, when it starts to decline, influences our habits? For example, we know that chronic stress disturbs our microbiota. Studies have shown that an increase in cortisol release can play an important role in the changes in our

intestinal permeability, which has been known to promote bacterial overgrowth in the liver and spleen. Hence, it seems we are back to the old "leaky-gut argument". In addition, about 60% of anxiety and depression patients are described to have intestinal function disturbance, such as irritable bowel syndrome. The link between those with acute mania and the frequency and intensity of their antibiotic prescriptions has been noted. Those with a higher degree of mania severity were shown in the past to have had a history of intense and frequent antibiotic use. The proposed mechanism for this is that the usage of antibiotics could have inflicted a possible change in the microbiota, thus increasing the risk of a mood stage change.

So, it seems that our intestinal microbiota has a bi-directional effect on mood disorders through mechanisms of neurobiochemical, neuroendocrine and neuroimmune systems. This presumption shown in human trials is also being replicated when using murine models.

In one study, the data suggested that mice that had been maternally separated at birth showed a change in the microbiota of their faces, precisely the level of cortisone, in comparison to mice that had not been maternally separated. Furthermore, sterile-raised, microbiota free rats are found to have an increased anxiety-like behaviour, suggesting that an intact, diverse and healthy microbiome can downplay anxiety-like symptoms. It also seems that depression-like symptoms can be transferred from one being to another just by the colonisation of the dysbiotic microbiome - which is what one group demonstrated. Published in The Journal of Psychiatric Research, Kelly et al. showed that by performing faecal microbiota transplantation from a depressed patient and planting it in a microbiota-deficient rat, the recipient would then exhibit behavioural and physiological characteristics of depression. However, utilising faecal transplant methods to cure depression would just be disgusting, right?

***“Am I simply a vehicle for the numerous bacteria that inhabit my microbiome? Or are they hosting me?”***  
**- Timothy Morton**

Luckily, there seems to be another way out. Studies suggest that ingestion of Lactobacillus strains help to regulate emotional behaviour via the vagus nerve, as the Lactobacillus subspecies can secrete acetylcholine which regulates memory, attention, learning and mood. In addition to L.acidophilus, Bifidobacterium infantis, Bifidobacterium, Candida, Streptococcus have also been clinically proven to have therapeutic effects on our mental wellbeing through the secretion of neurotransmitters such as dopamine. Thus, it seems that administering the correct prebiotics and probiotics infusion, plus maintaining a healthy lifestyle that encourages a diverse and flourishing intestinal flora, holds the key to relieving depression and anxiety-like symptoms.

Interestingly, one method in which we can shape the structure of our gut microbiome and move the needle almost instantaneously is through the use of hyperbaric oxygen chambers. Hyperbaric oxygen, at its simplest, delivers ~100% purified oxygen to the body via the breath at increased atmospheric pressure, thus allowing the blood plasma to absorb up to fifteen times more oxygen. The potential of molecular oxygen as a potential mechanism in treating intestinal disease is showing promising results.

Studies have shown that just after nine days of hyperbaric oxygen, tissue oxygenation within the gut increased by 5-fold, and the microbial community surveyed in the faecal apples also shifted in composition. Furthermore, it has also been suggested that hyperbaric oxygen alters the host mucosal bacterial communities and provides further protection against pathogenesis to potential pathobionts in the gut. The mechanism is primarily based upon the faster healing, enhanced immunity, recruitment of stem cells and prevention of harmful bacteria colonisation due to the increased delivery of oxygen within the intestinal tissues.

The bottom line is that we must pay more respect and homage to these tiny creatures besides us. How many of us are genuinely conscious of the beautiful microscopic world that shapes us every day? Even our perception of the world and the clarity of our thoughts are affected by our microbiome. To put it simply, everything about our health, how we feel both emotionally and physically, hinges on the state of our microbiome. I can conclude that it would be in everyone's best interest to learn the secret life of our microbiomes.

***“The next generation of microbiome medicines will instead be real drugs that are easy to take and safe”*** -  
**Roger Pomerantz**

ABOUT JESSICA ALANA



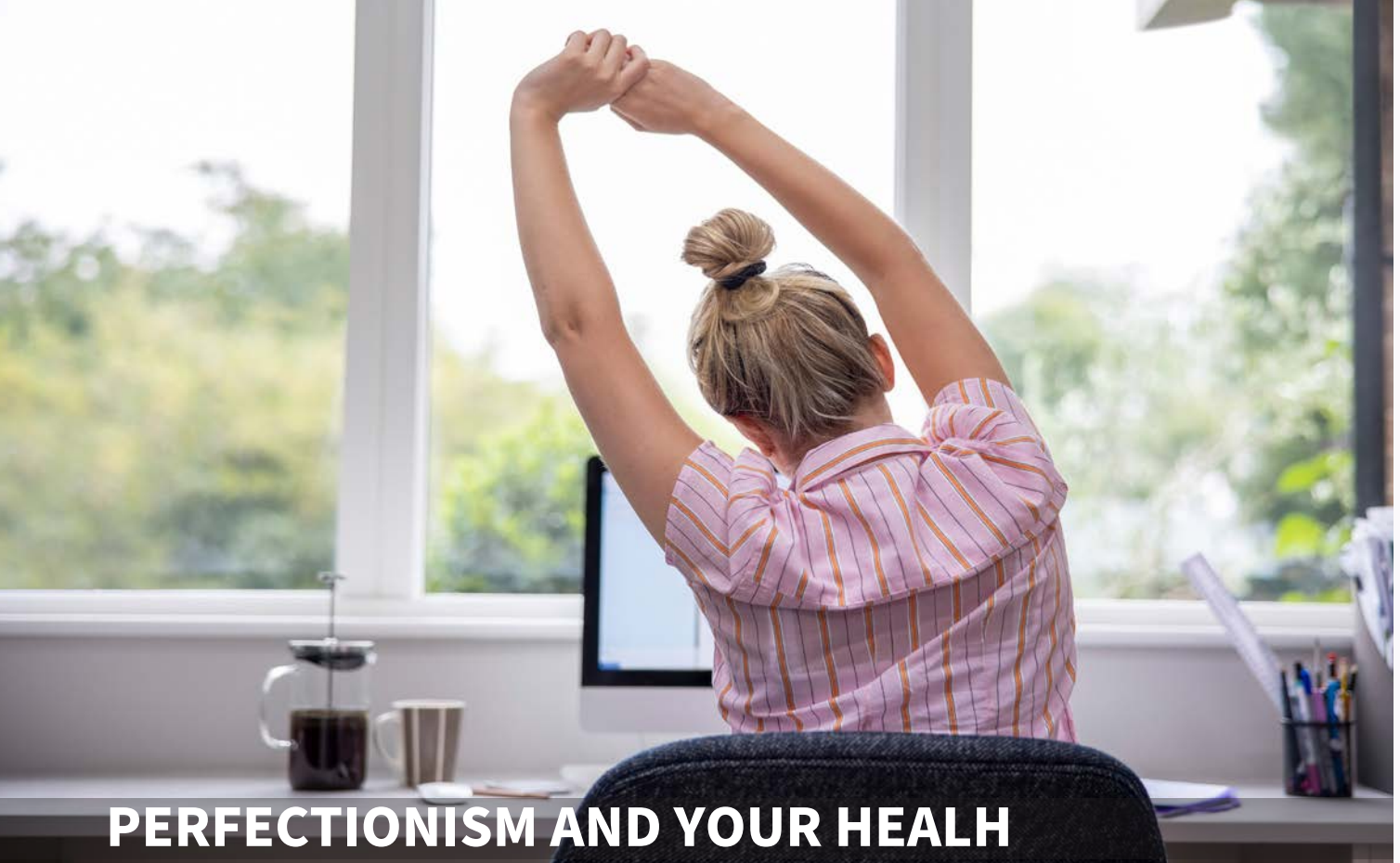
“Jessica holds a specialist degree in biomedical sciences which she uses to robustly pursue her passion for holistic health and wellness. After losing her mother to a long battle against mental health in 2019, Jessica lost faith in conventional medicine and the pharmaceutical industry”.

Quote: “Medicine has become a place of greed, it is no longer valuable to the pharmaceutical industry to create cured patients, rather, they are looking for customers for life.” “I believe we are given life on Earth to help others grow and the planet to heal, once this is achieved by each individual, we can enter moksha.”

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## PERFECTIONISM AND YOUR HEALTH

Imagine how you feel after discovering that your project that you've worked so hard on, has been rejected. Some people could feel so frustrated and so miserable. Sometimes, people can be so critical and intolerant with errors and faults.

Perfectionism is a personality style that can be positive but can also be a dysfunctional pattern. This kind of personality can result in serious psychopathological problems, like depression, anxiety, stress, obsessive-compulsive disorder, anorexia nervosa, and suicide. A perfectionist desires to achieve a high standard of goals with high quality, and if they cannot, they feel quite frustrated. Perfectionism is also associated with low self-esteem, the tendency to self-criticize, and susceptibility to external criticism.

Hewitt and Flett (1991) propose a model to comprehension aspects of perfectionism derived from three dimensions: self-oriented perfectionism (internal motivation to obtain perfection), other-oriented perfectionism (establishes

standards of demand and critical for others), and socially prescribed perfectionism (have to achieve the expectations of others in order to have value).

Researchers discussing the origin of perfectionism have signaled genetic aspects and learning factors. Rigid and critical parents contribute to a low tolerance to error. The imitation of perfectionist behaviors and favorable environments increase the search for unattainable goals, causing much suffering.

From a cognitive point of view, we can understand perfectionism as a dysfunctional pattern of thought. The thoughts have rigid, high and inflexible standards. The most frequent thought errors of perfectionists are all-or-nothing thinking, overgeneralization, disqualifying of 'positive-should' statements, always being right, mental filtering, labeling, catastrophizing and personalization.

Thinking about not being so great or good enough, perfectionists tend to have behaviors to compensate for their perceptions of failure. Because the way we perceive

our experiences and interpret the world affects our way of thinking generates emotional, behavioral, and physiological responses.

To avoid errors or failure to achieve high standards, perfectionists invest in counterproductive behaviors that contribute to the formation of physical and mental illnesses. It is very common for perfectionists to overwork, waste time redoing jobs, making multiple lists, avoiding doing tasks for fear of not doing well, and comparing themselves with others.

Procrastination potentiates anxiety and ends up validating the perfectionist's low self-esteem thoughts. Avoidance is a behavior also used as a strategy to get out of situations that test your performance for fear of failure.

Perfectionism can lead to feelings of sadness, anger, nervousness and frustration. In addition, it can trigger physical problems such as muscle tension, chest tightening, tiredness, insomnia and exhaustion. Over time, these feelings and behaviors of neglect can lead to serious psychological and physical problems.

Emotional problems and stress can affect the immune system, blood pressure and lead to sleep disorders, among others. Perfectionism can also be a stimulant to

relationship difficulties, excessive hopelessness, and trigger suicide.

Some individuals feel a lot of shame at not having achieved their goals and lose interest in life. Focused on high goals that are impossible to achieve many times, perfectionists tend to interpret their failures as great tragedies. Some believe that they are not important and their life has no value if they do not achieve their personal and professional goals.

The questioning of its value and hopelessness can be accompanied by intense sadness. These feelings and perceptions can trigger from intent and ideation or even culminate in suicide attempts. In these cases, listening without judgments is fundamental to stimulate a person engaging in mental health intervention.

Postmodern society stimulates perfectionism by making this pattern feel natural. For this reason, it is so difficult to recognize the problem and seek specialized help from psychotherapists and psychiatrists. In addition, there is still a lot of taboo on mental health care issues.

The indicated intervention is cognitive-behavioral therapy. The focus is not to stop aiming at objectives and high standards of tasks, but to make thoughts more flexible and develop more functional behaviors.



The cognitive therapist should strive to build a solid therapeutic alliance. Perfectionist patients tend to give up therapy early for fear of losing their personality characteristics and doing their activities without quality.

Therapeutic groups for perfectionist people are a great alternative to reduce dysfunctional thoughts and behaviors. In group learning, it is possible to perceive and validate that what you feel is not unique and that other people share similar dilemmas. I hope one day to lead a therapeutic group. Would you engage in this experience? (I confess I would learn a lot to deal with my own perfectionism).

It is already known that perfectionism involves the perception of emotions and feelings that cause discomfort. Feelings of guilt and shame are triggered whenever the person does not reach the unattainable goals that are imposed. In therapy, emotional regulation techniques and tolerance to discomfort are stimulated. However, the change in perception and thoughts are still the main tools of the intervention of perfectionism.

Changing thoughts takes time, but there are simpler things you can do right now. Excessive self-criticism is what

causes the greatest suffering for people in this profile. One way to reduce suffering is to try to practice self-compassion, acceptance, not-judgment, and gratitude.

Do the exercise of changing your internal dialogue. Try to avoid taking responsibility for everything and punish yourself for any mistake. Sometimes we're executioners of ourselves. If it's too difficult, imagine how a loved person would talk to you affectionately. What would she or he say to you?

Observe and value your achievements, even if they are small. Sometimes we just focus on what's wrong. If necessary, use a notebook to take note of some achievements and write down what makes you feel grateful. At first, these positive psychology exercises can be difficult, but it helps to better your perception of well-being.

Changing is always a challenging task. Be patient in the process! You've probably been thinking as and acting as a perfectionist for many years. Pay attention that your own perfectionism does not sabotage your change.

I hope you have more lightness in your life and achieve your most beautiful goals by taking care of your mind, brain, and body. ☺

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## ABOUT MARIA LAÍS CAMPOS

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## HOW TO LEVERAGE STRESS LIKE A NAVY SEAL

Stress. A monstrous culprit in the life of many of us, guiding our decisions often in the wrong way and creating a sense of impending doom even for everyday simple tasks. 60% of adults in the US admit to feeling a sense of worry and stress in their lives. Nobody wants to go through life feeling tense, their stomach in a knot and for the more specifically 18% of individuals diagnosed with an anxiety disorder in the United States that is their reality. The problem of simply feeling stressed out on a daily basis affects more than half the population and no matter the cause: relationships, work etc.. It always has a solution. When dealing with stress, the first thing often recommended by professionals and therapists is to use physical activity to help combat the anxiety. Activities such as weight lifting or meditation have been proven to be effective at soothing

the mind by almost causing a sense of beneficial distraction. Sadly, attempting to avoid the stress entirely can further lead to negative side effects and can negatively impact your professional and athletic life. The most powerful biohack to actually help resolve the stress is to work alongside it and not against it. In fact, if you can figure out how to gain control over your anxiety, the crippling feeling can further be used for motivation. The upsetting truth is, we humans need stress. When taking on something challenging we experience a sense of anxiety which is perfectly normal. However, when we decide to stay in our comfort zone we soon come face to face with a possibly even worse culprit if not channeled properly: boredom. Based on research there seems to be a perfect balance called the theory of “flow” developed by professor Mihali Csikszentmihalyi. A channel where optimal



satisfaction and productivity is achieved where we don't feel too anxious to not do anything or too bored to create anything. Though you already know this, boredom itself isn't inherently bad either. There seems to be two different types of growth we come across throughout our lives: boredom driven and anxiety driven. Boredom driven growth helps us take on moderately difficult tasks through the use of creativity and simply feeling like you have nothing better to do. Once this new challenge becomes boring you begin seeking a slightly harder one and the process begins. With anxiety driven growth, this is when you really feel like things are moving along. You take on a challenge that goes beyond skills you already possess making it nearly impossible but not quite. These "missing pieces" create the anxiety that is necessary for this process, compelling you to take on the challenge at a rapid rate. Both kinds are great and beneficial to you and will get you to your final goal, however anxiety driven growth will simply get you there faster.

Though stress in and of itself truly does feel terrible, it actually turns out it gives us an advantage. Research demonstrates that when we experience anxiety, our heart rate quickens and our focus improves, giving us what we need to help conquer whatever it is you're attempting. The body really has a natural way of dealing with pretty much everything. Surprisingly, it's believing stress is harmful that makes it harmful. Once again, mindset truly is everything. Actually convincing yourself that anxiety has a negative effect on you causes your blood vessels to constrict themselves leading to heart problems down the line. The key is therefore to approach it with a healthy mindset. That's a lot easier said than done when feeling overwhelmed over the 50 page paper you have to write for school by tomorrow, however, if dealt with correctly it can be empowering to feel stressed and will heighten your focus. Self reassurance and the understanding itself that stress is good helps to channel it safely and healthily. Activities such as practicing gratitude, meditation,

using the energizing effects of it through physical activity, mindfulness and focusing on what you can actually control are beneficial practices to help live alongside your anxiety. After all, it is part of you.

### **Navy Seal Training Methods and how you can benefit from them.**

We all know training in the army is a big deal and it's unquestionably tough. Not only is it extremely demanding, it is also very hard mentally. It is not designed to get you fit, it's designed to get strong, mentally and physically. A physical screening test is necessary in order to pass onto the next step in order to ensure each candidate is at his prime health conditions. The navy PST is designed to see if you have what it takes to enter SEAL training and is definitely not for the faint of hearts. The first step starts off with a 500 yard breast or side stroke, the minimum passable time being 12 minutes and the optimum being 9 and a half. These are incredibly difficult stats to achieve and would require a great deal of precursor training. This is followed by a push ups test, the minimum being 42 in the span of two minutes and the best being 100. That's almost 1 pushup a second! Then comes a sit ups test with the passing grade being 50 in two minutes and the best being 100. Arguably the most difficult exercise in the PST, comes in the pull up test with a minimum of 6 required and an optimum grade of 25. Finally, last but not least, the candidates must partake in a 1.5 mile run which must be finished in at least 11 minutes and at best 9 and a half.

This kind of exercise is designed to force the human body to reach its maximal capabilities. Just to give a clear picture of how truly difficult and demanding the SEAL training program is, out of 1000 candidates only about 200-250 actually succeed. After the preliminary test is completed and succeeded, 5 stages follow all ranging in difficulties. Stages include tasks such as calisthenics, time limited activities, 4 hours of sleep per night meaning 20 hours of work and training, combat diving, land warfare training, free fall



make sense to only train your muscles and not the organ making it possible in the first place. Mindset is the reason some people succeed in completing the training while others drop out. These candidates are taught throughout the training multiple important lessons that don't only help in physical activity but also in everyday life such as the benefits of setting micro goals, visualization, mental toughness, humility, overcoming failure and perseverance all key competencies we are aware of but don't really understand how to actually use. A lot of these we learn to incorporate in our lives through experience, so let your training be your mentor and take inspiration from the things our navy goes through. It shows how hard work pays off in multiple ways by helping you grow as a person and inspire others to do the same even without all the borderline impossible tasks SEAL training involves. If your goal is to be ordinary, there truly is no point in pushing yourself to your limits but if you wish to inspire, work your butt off to become someone worth the inspiration.

parachuting and skydiving... Lots of scary stuff. This may not seem like a lot but 75-80% of contestants drop out due to the difficulty of the program.

So what can we, as everyday athletes with no real desire to join the army, learn from this test? Firstly, it can serve as an inspiration to push our limits. Those guys who complete the entirety of the program have not only become fit and strong physically with the strenuous exercise but their mental diet is impeccable. They have a tough mind and have been conditioned to convert stress into effort, something we all wish we could do. Though I don't recommend everyone to start enrolling in such a program as it is not for the faint of heart, athletes worldwide have a lot to learn from those who succeed the SEAL training. It truly demonstrates just how crucial a strong mind is and how far it gets you. It is basically as important if not more than the workout itself. It doesn't

### **ABOUT NOEE MATHILDA SPIEGEL**



Noee Mathilda Spiedel is a published reporter, in charge of research. She writes or reviews most articles and reports on information.

The background features a central bright light source that radiates outwards, creating a tunnel-like effect. The light is primarily yellow and white, with a soft purple and blue glow. Numerous thin, glowing lines radiate from the center, some forming concentric circles and others creating a starburst pattern. The overall effect is ethereal and futuristic.

# CORE

***The turning point in the process of growing up is when you discover the core of strength within you that survives all hurt.***  
***- Max Lerner***



# EXCLUSIVE INTERVIEW

With Our COO,

**JEAN FALLACARA**

Serial Entrepreneur,  
Scientist, Author, Athlete and  
Creator of Cyborggainz



*Dallas:*

*Hello everyone. This is Dallas McClain again from Biohackers Magazine. I'm here with our COO, Jean Fallacara who is a man that really needs no introduction. He's done so much and is just doing so much. He's currently the COO of Biohackers Magazine. He is a serious entrepreneur has been for awhile now. He's an athlete and biohacker expert in calisthenics. If you want to know anything about this, go to this guy. He's also written a book recently, 'Neuroscience Calisthenics'. And he's ranked number five on the top 10 motivational influencers list. So let's not leave that out. I could talk for at least five more minutes about the introduction of what this guy has done and the accolades, but we want to get right into learning from this expert that we have with us. Jean, welcome.*

*Jean:*

*Thank you for having me. Thanks for saying all these things about me. Some are true. Some are exaggerated. I would say, I'm just trying to strive and to go through life, helping others, myself, my family, and spreading love. That's it.*

*Dallas:*

*There you go. Look, there's a, there's a perfect example of a guy that's not letting the success make his head too big or anything. You know, you're a humble guy at heart and I think that's what a lot of people want to see as leaders in the bio-hacking industry in particular. Staying with that point, Jean, you mentioned your service to others and what you do now with Cyborggainz and Biohackers Magazine, your book, and sharing all this information with others - my question is: What would you say is the main vocation, your main mission of life*

*and why you do what you do?*

*Jean:*

*The main mission should be improving life of others and making this world a safer and better world for everyone. As simple as that, I don't think that there is any other mission such as making more money, becoming more famous or all this things that are worthless, right? We live in a sort of general community that is like 6 or 7 billion people. And wherever they are, whoever they are, we're all one.*

*Dallas:*

*Well said. Yeah. And staying with that ideology, currently the world is kind of going through this façade of placing the importance, the significance, the thing to achieve, as all physical, right? You have to look good, you have to be good and you have all these influencers or social media. And although a lot of things start out good, maybe they become abused. But going back to the physical way of things, you're a very in shape guy, you post all these videos about you doing some crazy insane workouts, which is really cool, but you also tie the mind into it, which is a thing I think a lot of other influencers maybe in your same area may not do. And that's an interesting bridge, the mind and the body. How do you utilize your experiences and use that to show others how this bridge, this connection can be a valuable asset in one's biohacking?*

*Jean:*

*It's very simple. Knowledge is knowledge, okay? Knowledge is important. Knowledge, make our words better, people better. If you know something, you become better, as simple as that. First of all, I'm not an influencer at all. I don't want to influence people. I want to inspire people. I don't want to be the example that you want to follow, because I want to look like him, or I want to do that. And I really distance myself from any other influencers because I'm going to be blunt and frank: being an influencer is a shitty world. It doesn't bring you anything except your ego flattering you all day long. And I don't need that and I don't care about it. I don't monetize*

*my Instagram account.*

*Jean:*

*So I do it for free. And even if I have like quarter of a million of followers, I could make money out of it. And I don't. And when people approach me to act as an influencer brand ambassador or things like that, I don't want to represent anyone. I represent myself, my ideas and my knowledge, and this is free. I give it for free to anyone that wants to listen. You're not forced to follow me. You're not forced to like my posts. You're not forced to comment on my posts, but if you're on my page and you follow me and you like my post and you are reading what I write, then you're learning something and then it's a win for me. And it starts from the mind to go back to circle back to your question. It starts from mind.*

*Jean:*

*I want to nourish your mind because if you control your mind, you'll control your body. And then you look good naturally. When you know where you're going, your body starts to change. You're going to lose weight. If you're overweight, you're going to gain muscle. If you're don't have enough muscle, you're going to be stronger, faster, more mobile, just because it's in your head. It started there and you made it. I know how to do it. And this is a free knowledge I can bring to the society. That's my part, my contribution. And I'll do it outside of my busy days and job and things like that.*

*Dallas:*

*I think that's really well said. And that's a very cool mission that you have Jean, to just share things without looking for anything in return. I think we need a lot more people like that in the world, for sure. Going back to your point about how it starts all in the mind, we can take a kind of philosophical approach here. There's been a lot of philosophers in the past that have said, there's a hierarchy, right? There's the soul, the intellect. And that is a form of the body that acts on the body. The body moves through the soul or through the mind. So I think a lot of people in the world today are focusing only on that, that lower tier of the body and this gets them*

*into trouble, right? Because they're not nourishing their mind like you said. They're not seeing the importance of what they think, how they feel, and how that affects their body. And maybe that's why they're not seeing changes or anything like that. So my question to you is how do you make that penetration into someone in order to get them to realize it's all in the mind? It's not just what you see, it's everything that you can't see that is actually driving the things that you can see.*

*Jean:*

*People are driven and they understand by example, most of the time. I'm an old man. I'm not the 20-year-old boy, doing exercise and these guys, they do it fantastically great. And I have a lot of respect for all in the community that do the same sport. But I'm an old man and I have to admit it, but I show people that age is what you have in your heads. It reflects who you are on paper. I'm using my knowledge to put my body into peak performance. And that peak performance brings a certain feedback to my brain. My brain nourishes my mind, and my mind being in harmony makes sure that what I think, what I feel, what I see, goes back to my body, through my brain, the proper way and the positive way, giving us some sort of Zen attitude, I would say, or calm attitude or controlled attitude.*

*Jean:*

*But as matter of fact, I control totally my body from toes to hair. I show people that and people live by example. So they see that they look closer and see that I have gray hair that have wrinkles, and they were like, what is going on here? I always give tips on how to optimize your brain-body communication. And people just start one day to implement one and they see it works. And then they start to implement to another one, they see it works. And at the end of the day, if you make the effort, they see that their life improves and I'm happy. Sometimes they tell me sometimes they don't. And it's funny because I see people implementing my stuff and they're young or they're old, but I don't see them commenting on my posts or making a Instagram live or whatsoever, but sending me a message maybe every six*

*months or every year, just to keep up with their progress, telling me, "Hey, I did that things that you said last time, and I'm here."*

*Jean:*

*I'm doing these things and they're not super active, but they're there in the background. And I love it. I love it because this is our society. The way it is, nothing is granted. And I'm not asking for anything. I'm just happy knowing that out there, there is an underground world that I don't see every day but when they pop back up, I know that they were doing stuff in the background and they had what I was trying to teach or to preach in their mind. So my mission is accomplished in that way.*

*Dallas:*

*Yeah. It's kind of a delayed reward in a way to see students coming back to you, followers coming back to you and saying, "Hey, listen, I tried this and this helped my life." You know, that's a great thing. Staying on that subject of the example, you obviously do a lot of things throughout your day, week, year, month, etc. What are some of the things that you would highlight that you do as a routine that have really helped that feedback between your brain, mind and body?*

*Jean:*

*Okay. Actually your body or mind or brain is again, one. Its all one. So it has to be in harmony, it has to be in balance with everything. And there's a simple thing. You don't need hyper high technology or artificial intelligence to get to that level, or a chip in your head, but you need to make some disciplined choice of who you are and who you want to be on the single day basis. So the routine is simple. My routine, for example, I wake up at five. And that's part of my life. I wake up at 5:00 AM naturally every day. I drink my water. I take cold showers. I do stretching. I'm exposed to sunlight. Those are details. These are just details when you listen to these, but crucial, when we're talking about mindset and body. If you don't expose your body, your eyes to sunlight, you're screwing up your whole life, your sleep, your energy,*

*your serotonin in your body, your happiness.*

*Jean:*

*It's a detail, but many people wake up in the morning and they don't even shower, or they shave in the car, which was in the garage. They go to their job. They don't have a window, or even when they step into their office, if it's a building, they haven't really seen lights, they spend their whole day sitting and eating chips and burgers at their office. They come back home, they sit on the sofa and they say "I can't sleep. I'm anxious." What?! Of course you are. This is it. You know, it's simple details that makes you in harmony with life and understanding that it's an easy job to be happy. It's an easy job to be a performer. Its an easy job to be cool and in balance with the world and yourself. Implement the simple tricks that the world has been pitching humanity since the beginning. Get some sun.*

*Jean:*

*Then, exercise; you cannot spend your days on a chair. Its as simple as that. You have to eat, but eat properly. Stop*

*the junk food and go naturally with what exists. Drink water, because we need water, for our body's 70% water. We need water. Then nourish your spirit. Your brain is plastic. You need to make it plastic. You need to remember, you need to learn. You need to expose yourself to novelties. Otherwise your brain is not shrinking like people said, but I think it's the neurons are not making their connections. So you become stupid. So you become inactive, fat and stupid. Of course, you're not happy, but in this turning and flipping over, it's an easy process. It's an easy job. It doesn't require so much energy, but just common sense. We call it biohacking now.*

*Dallas:*

*And starting, like you said, I don't think it requires much, but one thing I think that does really help is just slowly developing your muscle of discipline, right? - To continue and to implement those good habits. But it can be argued that it's difficult sometimes because of the world that people are lost in, from their old life. For example, society is telling them to eat the burger. Society is telling them to work a*



*nine to five job in front of a desk with no kind of release or break. Society is telling them to sit in front of their couch and watch sports or novellas, or, soap operas. There's all types of things that are going into their mind and creating these unhealthy thoughts. So people, I feel like, have a hard time escaping the world that they're trapped in. Even though they want to implement these new things, they have all these other sources telling them, this is what the world is doing. If you're not doing this, you're wrong. You know what I mean?*

*Jean:*

*You are responsible of your own life. Yes. That's the thing. No one is telling you things. No one is forcing you to do anything. Maybe the government with taxes, but nothing other than that. Every time you wake up in the morning and you put your feet on the floor, it is your choice. It is up to you to do it. It's not up to somebody else or someone else. It's not up to your wife, your kid, your dog, your cat. Yeah. But your life, it's your choice, your decision, no one forces you. If you want to eat crap food and say, it's because of the influence of our society, No, it's because your accepting it. You're adhering to that. And if you adhere to some things, if you accept it, then don't criticize it.*

*Jean:*

*At the end of the day, we are all human and we are not forced by anyone to do what we want to do. I do agree with you, Dallas that it takes a certain time to implement routine and the process is step-by-step. Our brain is made this way. It has to go chunk by chunk, small parts at a time. That's the only way to be able to achieve big goals. So from one day to tomorrow. You can not say tomorrow, I'm going to be jumping over the bar and do a 360 flip. It's impossible, but chunk by chunk, if you set that goal in the long run and you say, wow, but tomorrow I'm going to just start to do five pushups it's going to lead me there.*

*Jean:*

*That's the way. And it is the same for the food. It is the same for your job. It's the same for your relationship with*

*your wife or your girl, or man or whatever. It's the same for everything in our life. We choose what we want to do. And our brain has certain limits. You have to adapt it to the functionalities and the goals that you set, like, for example, 99% of people drop sports within 10 days, when they decide to do the sport. It takes 10 days and they will either move ahead or away from that. But if in the ninth day, you know, that it's going to be a struggle and you wake up in the morning, smashed, it's always up to you to put it in perspective and say, "yeah, okay, today, I know that it's gonna be a hard day, but I'm not giving up because tomorrow, it's done, I'm in for the rest of my life. Right?*

*Dallas:*

*Yeah. And a lot of people, like you were saying about the blaming of how they're telling me to do this, or I get all of this thrown at me, it's really just coming down to playing the victim right? - Versus taking responsibility and biohacking. What's so beautiful about it, is it's taking responsibility of yourself and your health, right? Biohacking through a way that's a little unconventional to modern day medicine, for example, which, there's a lot of great things that have come from modern day medicine. I'm not trying to bash modern day medicine, but we have this whole way of looking at when someone is sick. Now here's the treatment, take this pill. And then there's also the other side of, okay, here are the preventative things you can do to help and also not let this happen in the future. And I think slowly, the consciousness of the world is waking up to this a little bit. Would you like to comment on that?*

*Jean:*

*I think COVID helped a lot on that. People were just like waking up in the morning, going to their job and not saying that life is important. Health is important. So they've been restricted to stay home and they took the conscience that your life is not granted. Your health is not granted. If you don't put the effort like you said it's not gonna work. So*



more and more our world is going in the right direction. More and more people are conscious about the impact of the environment, of the food, of the thoughts, on your body and mind and health. And it's good. It's fantastically good. I think that we need to stop the greedy companies or corporations that try to leverage on this by selling the miracle Pill or dream that will never happen. For example, some might say "take that Pill and prolong your longevity of five years."

Jean:

That's bullsh\*t. They might say "take that pill on and you're going to be a strong man." Yeah, maybe Viagra or things like that works, but that's chemical. I'm confident, I'm a positive thinker and I think that next generation is the one that will save the world because I trust the young people so much more, and I'm always in a fight because when I have friends that are like in the seventies and friends in the forties and friend in the fifties, many are saying, "Ah, those kids days are punks, they're, blah, blah, blah." I'm always like "No guys, these guys are brilliant. They have knowledge that you don't even have at the end of your seven years of university." And they're only 13, 15, 16. Trust the process, our world is getting better.

Dallas:

I agree on that. And I think it's something where the old and young have to learn to help each other in order to make the world better. You know, the old generation knows a lot and can help the younger generation. And the younger generation has the energy to get things moving. They think more progressively, like "we can change this. We can change that." And maybe the older people will say, "no, no, no, this has been like this for awhile. We don't need to change that." But it forces us to ask these questions as a society and say, okay, we've been doing this for a long time now, but these people were having results, doing it this way. They're younger, but let's see if there's something to this, and this is where clinical trials come in, clinical studies and things like that, where we're seeing now pop up. But relating to neuroscience calisthenics, this

is something that seems a little bit more new, perhaps its existed for a long time, but at least the subject is getting out there to more of an audience.

Jean:

Yeah. Well, I would say that in the last 25 years, you've seen a bump into neuroscience. What I like about the neuroscience is the fact that it's the bridge between psychiatry and regular medicine. So we finally can make a connection and an image of what is happening in your head versus what is happening in your body. Before, medical doctors could take a x-ray or analyze it and say, "okay, this is the map of your illness. And in psychiatry, we'll use certain techniques to understand why you think that that way, or why you behave that way, why you cannot run that long, or why do you don't have that will or things like that. Neuroscience bridges those things, and explains the relationship between your body and functionalities of your body and the way that your brain expresses its concern or reaction.

Jean:

But to go back to the old and young generation, I think that the old generation brings the wisdom, which is okay but the knowledge comes from the new generation. The problem of the new generation is that the functionalities of the brain are not all made. Your brain is still plastic up to the age of 25; Its still plastic after that but it's way more plastic before 25. Your frontal cortex, your center of decision thinking, is not fully functioning at that age. So all people have their frontal cortex pretty much set. So they have that wisdom and their thinking, their ability to step back and reflect on a certain situation because they've been through it, they've learned it. The young, they have the knowledge, but they don't have that particular way of thinking.

Jean:

So they will react more with a reptilian brain reflex, and this reaction can sometimes be like an overreaction. As you said before, to bring back neuroscience and into calisthenics, I'm the first one that is putting the neuroscience into the sport. Some people have talked about the neuroscience for weightlifting and for running Marathons but looking at



*calisthenics, its gymnastic. I don't think that there is 0.001% of the population that is capable of lifting his own body on one or two arms from ground and coming back, like defying gravity. And I explained why neuroscience can help you to do that. I'm firstly doing this because I thought that it was a sport that when you look at it that's beautiful to see, but it's an extreme condition of training. And with the support of neuroscience, you can achieve that type of movement. It's opening doors to every single other sport. If you can do that on gymnastics, that extreme, then applying neuroscience to running, to lifting weights, to stretching, to yoga. It's a piece of cake.*

*Dallas:*

*Yeah. I'm so glad you said that because calisthenics, at least to me, and I'm sure it has felt like this to maybe some other viewers as well, it comes off as intimidating. If you're starting from a beginner level, you're like, man, that guy is doing something crazy. How can I ever do that?*

*But like you said, in the beginning, it's little slow gradual implementations by chunk. You know, it's going to be hard, but you just persevere. You said something interesting though. I wanted to bring up again, the frontal lobe formation, not really being there until you get to around 25. Have there been, are you aware of there being any any studies that show in some people maybe this frontal cortex developing at a younger age based on maybe some habits that they've done when they've been younger? The short question would be are the younger generation maturing faster to the point of having knowledge, that frontal cortex developed and able to make decisions better?*

*Jean:*

*Okay. Not really. Of course it's not the day of the 25th birthday. It's not like, "Oh, I'm done now." You can be like, plus or minus three, five years doesn't matter; it depends on the person. It's a cellular aspect of aging and processing. What I've been shown, today is that the*

*Hippocampus, the center of memory more or less, is way more developed in the youngest kids than it was before. So that part is increasing and our brain is not growing actually. It's not getting bigger and bigger. It's pretty much the same size. And it doesn't matter if you have a 180 IQ or under 50, your brain is going to be exactly the same size because it's used for so many and several functions day to day. We're probably going towards more capabilities of thinking to answer your question and not going into too much of a philosophical discussion, but the young people are capable of using information properly to take a decision differently.*

*Jean:*

*And this is what could lead you to think that their cortex is more developed than it was before. To the cellular level, it is not, but they have this hippocampus filled up with so much information that they can process information in certain situations and after the first reflex, that would be a reptilian reflex, if they take the time to master and control their thinking to look back into the information they stored, they probably can make a better decision. And this is why when you first explain things to teenagers today, they're just like blocked and they reject everything. But the young generation comes back to you now and say, "oh, I'll give it some thought. And yes, there is this and this and this aspect." When I was a kid and a teenager, it was like, I was blocking it. And I was just like, well, "F - off." So they are more mature in a way and they process information differently. And that's probably why this generation is going somewhere.*

*Dallas:*

*So would it be partially due to an external factor of the information age, us being an information age, where information is just so available? You don't have to necessarily search for it as much. Nowadays, you can just look at Google instead of running to an encyclopedia. I remember having to use an encyclopedia sometimes in school, but the kids now can find anything on the internet.*

*Jean:*

*And they everything.*

*Dallas:*

*They know everything.*

*Jean:*

*Yeah. They know everything. My daughter, she was eight. I was talking about the dark web with my wife and we're just having a drink. And I was just talking about the dark web. And my wife goes like, what is the dark web? She's eight. She walks into the room and she goes like, "oh, the dark web was invented by that guy. He created that because he wanted to have some business underground and it was mainly for drug trafficking's, blah, blah." We were just like, "what the heck is going on?" Of course she had the phone, she had access to a computer and went to school, but this is it. We are bombarded by so much information. And with their capacity of retention, because their brain is super plastic, the capacity they have for retention of information, makes them kind of almost geniuses. When you look at it, of course, it's not that deep. If you want to criticize and be a critic, you can say, "yeah, but it's superficial knowledge." And some would say that it's fake knowledge because there is a lot of fake things on the internet. It's discussable. As a matter of fact, at least they have something.*

*Dallas:*

*Right. It's still information, right?*

*Jean:*

*That's the most important thing. They create themselves. They create their personality. They're aware. Being aware is the most important thing in life.*

*Dallas:*

*Yes. Yeah. That's true. I think that's true because when you're aware, you're able to process in a healthy way, with everything that's going on. And you mentioned earlier, Jean, about the younger generation, having this hope in the younger generation to save the world and everything, talking about health specifically and biohacking, what is it that is the biggest threat to our health and how will the*



*younger generation respond to that threat in the years going forward?*

*Jean:*

*Humans are the biggest threat. Of course, they create all sorts of harmful stuff that other people inject or digest or try to digest. They create viruses, different germs, alteration. They are smashing our planet that is not capable of keeping his equilibrium and that is so important for our life. What we breathe, what we see, what we eat comes from our planet. We're screwing it up. So the biggest threat is the human in itself. We're going to destroy ourselves if we don't do something and once again, we are masters of our decision. So no one else except us will change the world to make it livable and good for everyone. We can destroy it or we can make it better. And once again, it's our decision.*

*Dallas:*

*Right? And that decision, although it rest in every human being, you were saying earlier about the younger generation, how are they responding to this and how are they doing?*

*Jean:*

*You know, this is what I love actually, they're very conscious. They're very conscious about not throwing out plastic, not using, Styrofoam, not using a non-recyclable material. We, and me included, sometimes just don't pay attention. It's because we've been educated that way. So I have to think about it to do it, but for them it's natural. So sometimes you can be doing some things and the kid would come and say "hey, you know, the planet... Careful". But we were not educated that way, but I love it. I love it. We have to force ourselves. They don't, it's just part of their processing of being. And so that's why I'm very confident about the future. That's gonna be the right direction.*

*Dallas:*

*That's a great attitude to have. So my last question is how does neuroscience calisthenics play a role in determining the outcome of this human improvement, this changing in*

human consciousness, as you just spoke about of younger generations and younger people, having all of this information, bombarded on them, how does neuroscience calisthenics take all that information and filter it in the most healthy way?

Jean:

Okay. When you are in control of your body, you are definitely in control of your mind. And if you're in control of your mind, you take proper and intelligible decisions. So this is the whole concept of it. I'm not a professional sports guy, I'm an engineer, I'm a nerd, a businessman, but I do those sports with the will of controlling my mind, my body so I can make better decisions in my day to day, life and business and relationship and everything. It's all related. The way you behave, the way you are, the way you control yourself, the way you control the world and the way you control the world will determine the way others want to live. It's important. So neuroscience guys, thank you.

Jean:

It's interesting because neuroscience calisthenics, the book, is not even about the sport. It's about implementing the good habits to make a better you. And there is a chapter on sport as well, but it's mainly like a biohacking guide of simple tips that you can use on a daily basis. And I've not invented the wheel there. I'm just taking each and every step that you could implement in your life to make you better and to improve your brain. So you're going to improve your body. And if you improve your body, you're going to improve the overall wellness of yourself and the world around you. It's as simple as that. I'm a dreamer anyway.

Dallas:

That's a spectacular way of looking at things; just get everything in order, get everything as organized as you can to make the best decision you can. Simple as that.

Jean:

I heard this morning people saying "I have a crazy busy day." You know how busy I am? I will never say that

because if you say crazy busy day, it means like you're not organized. Put priorities on what you have to do during the day and organize them. Step-by-step, chunk chunk by chunk. Your day will just light up and you're going to go like, "oh, I have that much time left to do what? Oh I can do some stuff to improve my life." Walk outside because it's good for neuroplasticity. Take in fresh air or work with my circadian rhythm. But this is it. It's the way you see things that, will define the way you're going to behave in your life.

Dallas:

You know, it's interesting. You said that about business, there was a quote I saw other day and it said, "If you don't make time for your wellness, you will be forced to make time for your illness". So it's about this preventative approach that we were talking about earlier, nipping the problem in the bud early on, instead of procrastinating your health. Don't procrastinate, your health because your health is pretty much all you have.

Jean:

That's the first thing you have and you need it.

Dallas:

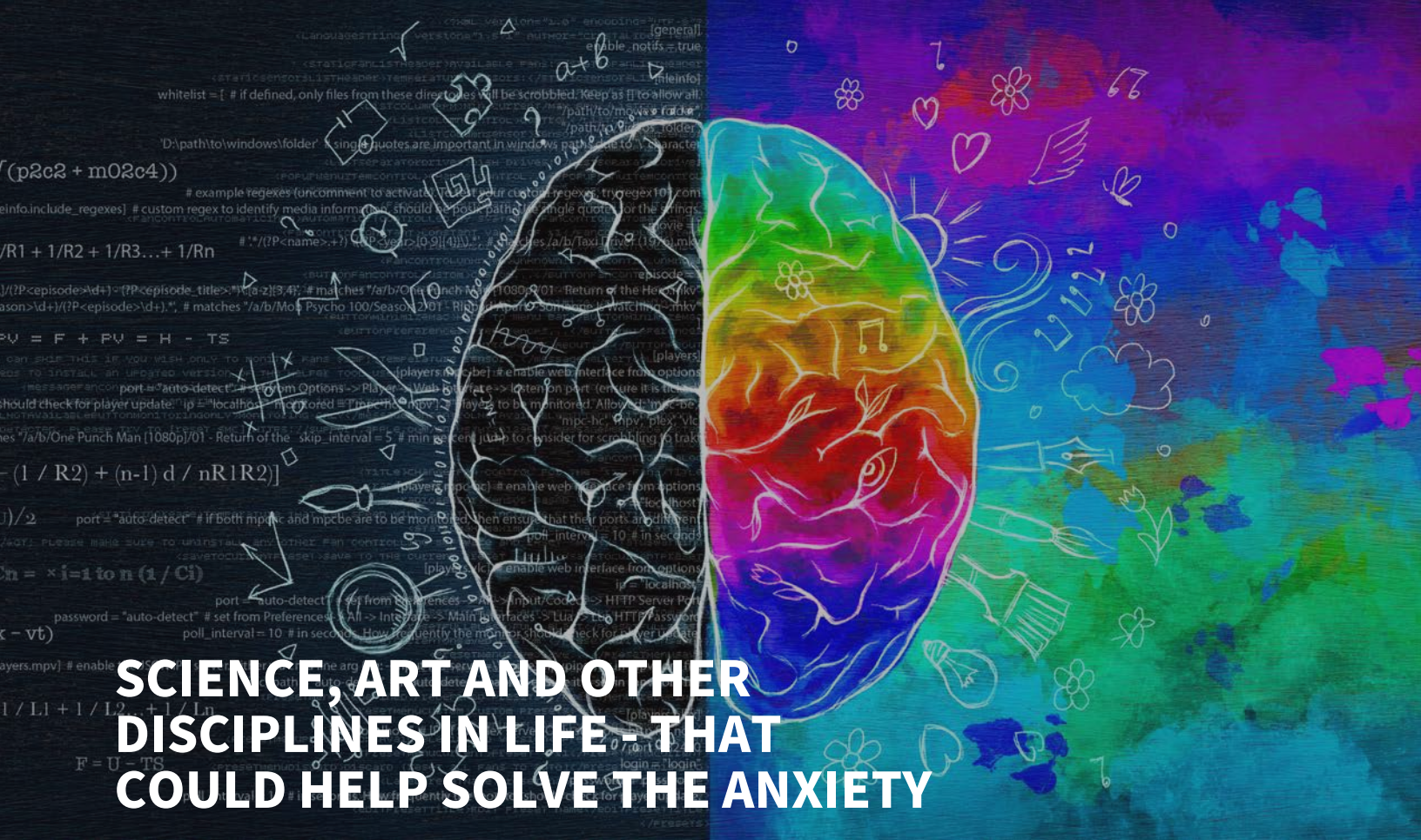
Yes, You need it. You need it to achieve and be the best version of yourself in every other area of your life. So this is what I think the world has to understand. Well, Jean, it's been a great pleasure. I know I've learned a lot. It's always inspiring talking with you. Our audience, to everyone out there, please go check out Jean on Instagram @cyborggainz, and also his website to check out his book, cyborggainz.com Jean, I know we'll do this again someday and as always, I appreciate everything you share, sir.

Jean:

Thank you, Dallas, it was awesome, a pleasure. Always a thrill talking about humanity.

Dallas:

Yes, sir. All right, everyone, have a great day. Thanks.



# SCIENCE, ART AND OTHER DISCIPLINES IN LIFE – THAT COULD HELP SOLVE THE ANXIETY

Imagine. Wandering imagination opens the gates beyond scientific paradise

Imagine. We write stories. They sometimes become true. If we keep chasing the white rabbit of the universe through the rabbit (black) holes, could we become the black sheep of our planet? What role can science and other instruments play to reverse the simply complex dark times that are closing in on us and to explore our inner and outer worlds?

Mastering complexity is the central competence of our Exponential Age. Whether it's about pandemics, climate change, migration debates, administrative reforms, artificial intelligence, or space exploration, it requires not only mental agility, but above all understanding - across as many disciplines as possible. Interdisciplinary work is wanted by all, but is difficult to practice.

We have evolved as natural explorers with an instinct to learn. Therefore we should follow all of these interests, as

they show us a mirror. We can see something unexpected about ourselves. I propose a way to integrate these approaches with a few disciplines.

This can help us understand each other across different cultures and specializations. We often fail to find a common language to cooperate on a global scale. How could we make it work? Which languages could we use to act globally?

We want to be smart, but we forget to be kind and humble, not realizing something is bigger than us. We think too much about the competition and not enough about the generosity. We are going for power and forget that power and science don't mix.

Science has many faces and can mean different things to different people. It is a way to look at yourself and the world around you. We only see what we know to look for, and science gives us better eyes, because it removes mental blinkers and gives our brain a much bigger playground.

Science will not make us smarter, wiser, or better human

beings, but it will connect us into the brains of many smart people who were there before us, so we can stand on the shoulders of giants.

Science gives us only one view of ourselves and the world. There is also mystic, philosophical and artistic view. Having these different options is the genius of our species; failing to balance them against one another is our curse.

There are parts of us that science can neither explain nor satisfy. If we see everything only through the eyes of science, our vision will be monocular and lack depth. A Rilke poem, the Adagio of Mahler's 10th Symphony, or van Gogh's last paintings tell me things about me that science never told me. Art and philosophy can be second vantage points that can grant us binocular vision and let us see the world in 3D. We should make science our home, but also venture beyond its doors.

The combination of art and science in one person is commonly seen as unusual. But why? Science and art share the same basics: creativity, analogy, perseverance, knowledge, imagination, dedication and passion! „Much

of good science has its roots in fantasy.“,

said “the new Darwin” E.O.Wilson, echoing Marie Curie's quote: “A scientist in his laboratory is not only a technician: he is also a child placed before natural phenomena which impress him like a fairy tale”.

Fairy tales contain a very archetypal language, a speech that speaks directly to us and educates us. Therefore, it would make sense to do research on science fiction too, as it communicates ideas about science to the masses. It can influence science communication of the scientists, so they could collaborate with the artists producing science fiction stories and develop a “language” that everyone understands.

The need for research involving multiple disciplines is growing. It happens for the fun of discovery and creativity, but also for the awe of multi-dimensional problems humanity is facing. And recognition that single-domain experts cannot solve them. Complex problems need complex approaches. The polymathic ones.

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Interdisciplinarity becomes trendy. The number of people with dual interest in art and science is growing rapidly. What looks as an innovative approach, is however nothing but the revival of the polymathic one. As we have observed throughout millenia, the major innovations happened through polymathic creativity, integration and holistic knowledge.

Prominent representatives of 20th-century natural science, Nobel laureates, such as: A. Einstein, M. Planck, N. Bohr, W.C. Heisenberg, E. Schrödinger, M. von Laue, and I. Prigogin never questioned the need of philosophy, literature and art. Their belief in the necessity of knowing humanities was fundamental. Einstein was seriously interested in philosophy, especially of Spinoza. Einstein believed that F. Dostoyevsky gave him more than any other thinker and more than the greatest mathematician Gauss. How come?

Today much has already been written about the “non-Euclidean” space of Dostoyevsky’s world and the paradoxical nature of existence in his novels. No wonder

that it fascinated Einstein.

Biographies of great scientists show that all of them were characterized by the broadest horizons, fascination with things not directly related to their specialty. And the broader a scientist’s horizons, the more components that influence his creativity. One might even say that success in special fields is directly proportional to the breadth of a scientist’s views and hobbies. It is proven that the logical, mathematical, or physical formulation of solutions to the great problems of science has always been preceded by intuitive, holistic images of that solution.

Our senses and brains are limited and imperfect. So is science. That is not a weakness. It teaches us to be humble. We can gain this humility from other aspects of life, such as art and philosophy. To realize that something is bigger than us, understand each other by being shaped by several disciplines and natural curiosity, so that we can cooperate for a greater good.

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## ABOUT DR. TOMAS EICHLER

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Tomas Eichler is a neurogeneticist who tries to understand the mechanisms of how molecules, cells, brains and all of us behave. He uses genetic tools to study brain functions, - especially during sleep & waking up. He falls asleep excited & can’t wait to wake up. With the heart of a physiologist & a passion for teaching, he hopes to spread science to the public, besides his scientific commitment to interdisciplinary research.

He is mentoring meditation, critical thinking, the toolbox of scientific methods, and reasoning as survival skills for today’s era of pseudoscience, health hoaxes & other dangerous manipulation. Mentoring lecturing & writing as vital skills for expression.

He has been awarded prestigious international Boehringer Ingelheim Fonds Ph.D. fellowship and Konrad Lorenz Institute Ph.D. fellowship. He obtained fellowships of the SPP Foundation (SmartHead) and the Orange Foundation (Chance for talents) for his MSc work.

A short documentary by Greg Boyle: <http://bit.ly/Why-and-how-we-wake-up>

Selected publication: <http://science.sciencemag.org/content/356/6344/eaam6851>





# BIOHACKING CELL TO HEALTH WITH LED LIGHT THERAPY!

LED Light therapy, also referred to as LLLT, Photonic medicine, infrared light therapy, red light therapy and many others names including “Photobiomodulation” which is a mouthful of a scientific term not commonly known outside the alternative medicine communities. Medical doctors are slowly beginning to embrace this remarkable technology. But give it time, and photobiomodulation therapy, a treatment modality that is easy to administer, highly effective, and non-invasive, will be commonly recognized and utilized worldwide — especially since more and more scientific studies are concluding that photobiomodulation therapy shows great promise in the treatment of an ever growing list of health issues, from pain relief and pain management to tissue and nerve regeneration to joint sprains and strains and even to brain injuries and brain diseases. Photobiomodulation, or low level light therapy (LLLT), has already been clinically proven to be a natural alternative to both drugs and surgery for many conditions.

## **What is photobiomodulation?**

Photobiomodulation, or “PBM,” is the use of light to accelerate therapeutic chemical processes in the cells of the human body that support the body’s own innate healing and pain relief processes. This light can be generated from non-ionizing sources, including lasers and light emitting diodes in the visible (390-700 nanometers [nm]) and near-infrared (700-1100 nm) region of the electromagnetic spectrum.

Len Saputo, MD, explains how PBM affects the human body: “Whenever an infra-red light ray hits a blood vessel wall, it causes an instant release of a compound called nitric oxide. And nitric oxide causes instantaneous pop-open of a blood vessel. So, suddenly, you have a change in circulation that is dramatic... It also causes a reduction in inflammation that happens very quickly, as well. It increases lymphatic drainage; it increases the activity of white cells so they clean up debris faster; and it has an amazing effect on nerves. It causes nerve fibers that are pain fibers to calm

down and not cause so much pain.”

So, as circulation is increased in the local treatment area, this allows for greater nutrient-rich blood flow to nerves, muscles, joints, and other tissues that improves tissue oxygenation and reduces inflammation – which reduces pain and accelerates the body’s natural healing processes.

In addition, adenosine triphosphate (ATP) production is also stimulated, which increases energy within the cells. According to James Carroll, recognized authority on PBM, “...when we put light of the right wavelength and intensity into people for the right amount of time, the right intervals...this light basically tips the balance in favor of more ATP and less oxidative stress. And under those circumstances, people get better more quickly.” This healing boost in the body caused by PBM actually continues for several hours after the light therapy session has ended.

### **PBM therapy: When to use LEDs**

The most common devices for generating photobiomodulation therapy (LLLT) are lasers and light-emitting diodes (LEDs). With LED diodes, the most commonly used wavelengths of red, blue, or near infra-red light deliver incoherent (diffused) light that spreads out, unlike the highly focused beam of coherent light emitting from a laser. This more diffused light makes administering LED light extremely safe. Lasers have their place when powerful focused energy is needed.

LED light therapy provides the patient the advantage of being able to have treatment on larger body areas, or two or more areas of the body simultaneously. Also, because LED light therapy is so easy to administer, a light therapy system can potentially be used at home by the patient for long-term pain management needs in the case of chronic issues, such as peripheral neuropathy, low back pain, or cervical pain. And for the practitioner, LED light therapy provides the advantage of being an unattended therapy once the pads are in place and the

controller is switched on.

LED light therapy features superluminous diodes of near infra-red light (often in the 800 nm range, with deep penetration up to at least 100 mm); red light (630 to 700 nm, with penetration up to 10 mm); and blue light (405 to 470 nm, with penetration up to 3 mm). Infra-red light at about 860 nm penetrates deeply into the body. Referencing studies done by NASA, Len Saputo, MD states, “about 60% of the light goes four inches deep, and another 40% goes down to about ten inches.”

### **LED light therapy benefits**

According to Len Saputo, MD, “There’s hardly a kind of pain that doesn’t respond to infra-red light therapy.” LED light therapy devices have received clearances from the FDA for (1) temporarily increasing local circulation and (2) the temporary relief of pain, stiffness, and muscle spasms. LED light systems are considered Class II Medical Devices.

Research conducted over the last several decades indicates that LED light therapy can benefit virtually every external part of the physical body and many internal organs, and can even uplift the emotions and enhance cognitive brain function. Exciting research is being conducted on the effects of LLLT on the brain by Dr. Michael Hamblin, Associate Professor at Harvard Medical School, and Margaret A. Naeser, Ph.D. at Boston University. It has been discovered that transcranial photobiomodulation can have a positive impact on the brain in relation to both trauma (for example, PTSD, TBIs, concussion, and stroke) and degenerative diseases (such as dementia, Alzheimer’s, and Parkinson’s).

A joint study by Hamblin and Naeser in 2010 concluded that “We believe that the high benefit:risk ratio of LLLT should be better appreciated by medical professionals in the rehabilitation and physical medicine specialties...the particular benefits of LLLT to both the central and peripheral nervous systems suggest that much wider use of LLLT could or should be made in cases of both brain diseases and injuries.”

## Conditions supported

Conditions that respond well to LED light therapy include:

- o Pain relief and pain management
- o Neck, back, leg, shoulder, wrist, knee and ankle sprains and strains (joint issues)
- o Inflammation anywhere in the body
- o Alzheimer's, TBIs, dementia, concussion, stroke (cognitive support for brain issues)
- o Acne, rashes, blemishes, sun damage, and skin elasticity (skin issues)
- o Collagen production, age spots, lines and wrinkles (anti-aging)
- o Hair growth (regrowth and hair loss prevention)
- o Immune system strengthening
- o Wounds, burns, pressure ulcers, and diabetic skin ulcers (tissue regeneration)
- o Post-surgical healing
- o Coughs, colds, and lung issues (respiratory system support)
- o Post heart attack recovery
- o Arthritis
- o Stress, Depression, and PTSD (negative emotional issues)
- o Spinal cord injuries
- o Nerve regeneration and neuropathic pain (peripheral neuropathy)

- o Carpal Tunnel Syndrome
- o Insomnia (sleep issues)
- o Seasonal Affective Disorder (SAD)
- o Sciatica and low back pain
- o Sports injuries, such as tennis elbow, rotator cuff injuries, and hamstring pulls
- o Edema
- o Excess fat (weight loss)

## A typical therapy session

LED light therapy is regarded as safe, painless, effective, non-invasive, and has no known negative side effects. Another advantage to this cutting edge, all-natural therapy is that there is no downtime after a treatment session. Because LED light therapy is beneficial for so many musculoskeletal issues, it is earning an important place in more and more chiropractic and physical therapy clinics.

So what is a typical LED light therapy session like? A typical session may last about twenty minutes, although longer or shorter sessions can be administered depending upon the discretion of the practitioner. Children usually receive shorter sessions. In the treatment of concussions or in the case of patients with unusually high sensitivity, even sessions as short as five minutes have been found to be effective.

The patient sits or reclines while pads, panels, or other devices containing diodes of near infra-red, red, and/



or blue light are strategically placed directly on or above the skin wherever healing and/or pain relief is needed. All the patient need do is relax and be comfortable. Once the pads or panels are in place and the controller is turned on, a gentle heat can be felt as the diodes shine brightly, emitting photons of light that penetrate beneath the skin and are absorbed within the tissue cells, although the diodes of near infra-red devices are outside the visible light spectrum. These photons cause nitric oxide to be released by the cells, increasing blood circulation and decreasing inflammation. As this happens, pain is reduced and the body is kicked into self-healing mode. A typical LED light therapy session is simple, easy, comfortable, and relaxing.

### **Features of LED light systems**

LED light therapy systems have been on the market since the 1990s for both clinical and in-home use. These systems usually consist of two components: (1) LED light pads or panels, and (2) a controller. The LED light therapy pads are made of flexible and comfortable neoprene and contain either a single wavelength or a polychromatic combination. The most common combination is red, blue, and near infra-red light-emitting inset diodes, although additional wavelengths (colors) are possible. Pads vary in size and shape, such as boots to treat peripheral neuropathy, and large or small square or rectangular pads for joints and other body applications.

The electronic controllers power the pads to flash the light of the diodes at different frequency settings known as “pulses.” Some controllers vary in the number of ports they offer, which determines the number of light pads that can be powered at one time. An individual controller may operate from one to eight pads. A two-port controller can run two light pads at once; a four-port controller can power four, etc. Among the frequencies on the controllers are often the seven Nogier Frequencies natural to our body, as developed by French physician Dr. Paul Nogier in

the 1970s. Additional frequencies and automatic programs of multiple frequencies, such as the Solfeggio Frequencies, may also be included within the settings. Controllers are usually programmable to turn off at a set time.

### **Light treatment for aesthetics**

Many people’s first exposure to light therapy has been through aesthetic treatment, having either laser or LED work done for facial rejuvenation, acne, or other skin issues. More powerful professional-level LED devices for aesthetics are now available, which offer a valuable option for both patients and practitioners because they deliver effective results along with an easy and comfortable therapy experience. This is particularly helpful for patients who have difficulty with the intensity of some laser treatments or the required recovery time.

### **Light systems for home use**

Patients with chronic pain management needs, such as those with peripheral neuropathy, will benefit from purchasing an LED light therapy system for home use. It is a safe, effective, and easy to administer alternative to drug therapy. In fact, a whole family can benefit from one LED light system. The light pads can be kept clean and sanitary for each family member by placing them in disposable plastic bags, or by placing a plastic bag over the foot and leg of the patient.

The same light pad can be used to treat a number of issues that affect different areas of the body. For example, since neoprene light pads are very flexible, the same pad can be wrapped around a hand to treat carpal tunnel syndrome; an arm to treat tennis elbow; or an ankle to treat a sprain. A long rectangular pad can treat most of the spine, or be strapped over the head with velcro straps to deliver light to the brain for a “brain boost.” Using a light therapy system on the lungs and nasal area of a family member with a cold or cough may accelerate healing. Buying an LED light therapy system for home use may just be one of the best investments

that can be made for the support and maintenance of a whole family's health and well being.

### Selecting a light system

Different brands of LED light therapy systems vary greatly in their manufacturing quality, their lifespan, and, unfortunately, their effectiveness. So, when choosing an LED light therapy system for home or clinical use, it is important to carefully evaluate the system before you purchase. To be effective, an LED light therapy system should:

- o Have the correct wavelengths (color and depth of penetration)
- o Deliver adequate milliwatt output
- o Deliver adequate energy density
- o Be medical-grade and FDA-cleared
- o Come with a warranty
- o Have a repair program

### Maintain health with light therapy

In this day and age, when the list of negative side effects for most pharmaceutical drugs is longer than the list of

benefits, LED light therapy provides an all-natural, painless, and easy to administer alternative. Accelerating the body's own innate healing ability is the best way to achieve and maintain health, and, hopefully, avoid drugs and surgery. And, as LED light therapy strengthens the immune system, treatments can also be preventative. LED light therapy is a very practical addition to any clinical practice and any family's medicine cabinet.

#### REFERENCES

- Saputo, L. Infrared Light Therapy by Len Saputo, MD, DoctorSaputo.com, 12 July 2017.
- Mercola, J. Photobiomodulation Shows Great Promise for Athletes, Chronic Pain Syndromes and More: Interview with James Carroll, mercola.com. 12 Nov 2017, Transcript, p. 6.
- Saputo, L. Infrared Light Therapy by Len Saputo, MD, DoctorSaputo.com, 12 July 2017.
- Saputo, L. Infrared Light Therapy by Len Saputo, MD, DoctorSaputo.com, 12 July 2017.
- Hashmi, J, Huang, Y, Osmani, B, Sharma, S, Naeser, M, Hamblin, M. Role of Low-Level Laser Therapy in Neurorehabilitation. American Academy of Physical Medicine and Rehabilitation. 2010 December 1; 2(12 Suppl 2): S292-S305. doi:10.1016/j.pmrj.2010.10.013:12.

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## ABOUT DAVID CHRISTENSON

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David CHRISTENSON is the founder and CEO of [Neurocare Pro](#), which serves medical practices across North America. He regularly consults with health care professionals on photobiomodulation advanced modalities with an emphasis on business development for medical practices. He speaks nationally and internationally on the many uses of

PBM light therapy, highlighting the research done in the areas of brain health, diabetic peripheral neuropathy, and chronic pain relief. He has also been a contributing author on the subject of PBM light therapy in various health care publications, and can be reached at [davidc@neurocarepro.com](mailto:davidc@neurocarepro.com).

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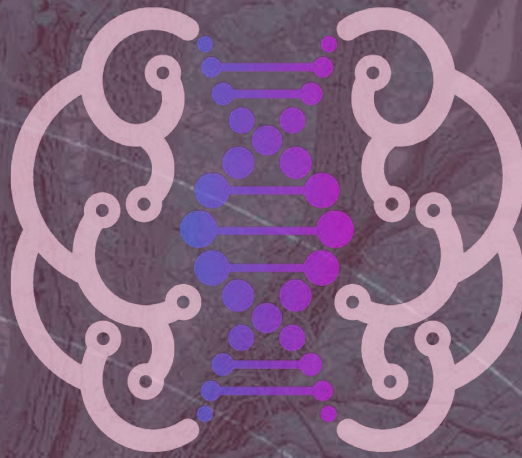
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