

BIOHACKERS

MAGAZINE

ISSUE 14

REED DAVIS

EXCLUSIVE INTERVIEW
With Renowned Clinician
& FDN Founder

**TACKLING
METABOLIC
CHAOS WITH
TESTS, DIET,
AND LIFESTYLE**

**NUTRITIONAL
THERAPIST,
FITNESS
COACH AND
FOUNDER OF
FUNCTIONAL
DIAGNOSTIC
NUTRITION**

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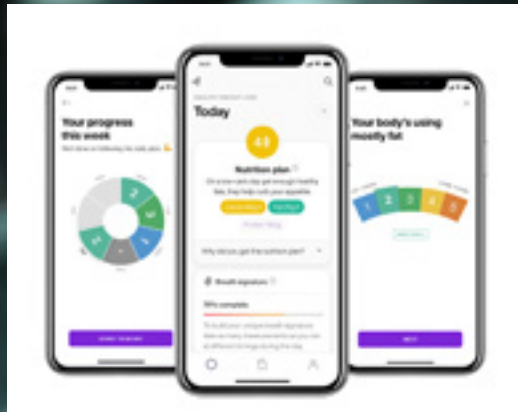
- **BIOHACKING SEXUAL HEALTH**
- **THE RULEBOOK OF PEAK PERFORMANCE**
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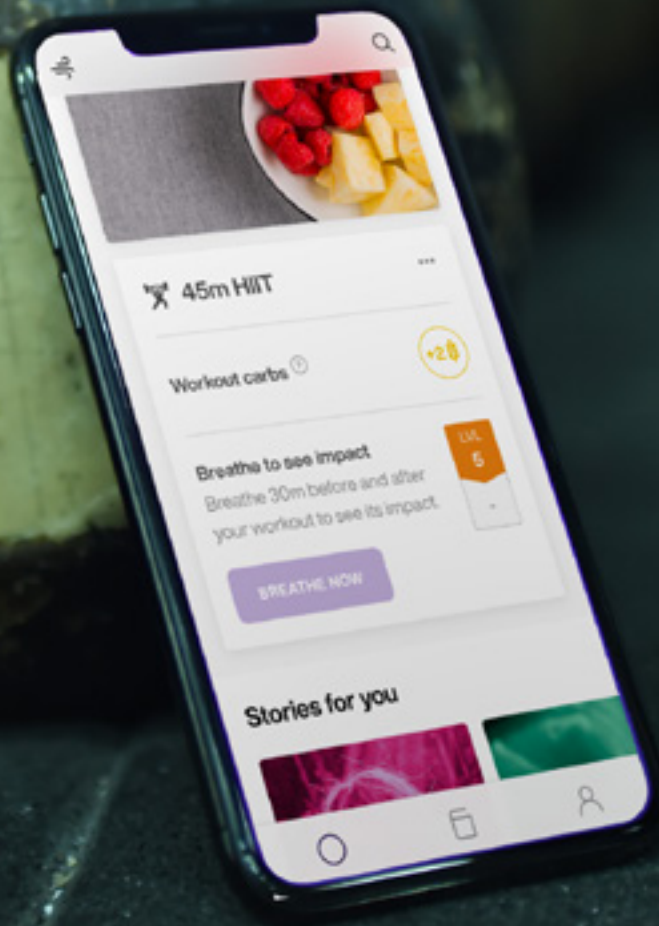


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Our Categories

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

Before I was a big avid reader of personal development books, my mentor would suggest books to me, asking that I only commit to reading 10 pages a day. It seems so simple, yet starting out, like almost any habit, no matter how small, it's a daily battle to stick to it. After a while though, I found myself easily reading 10 pages and then eventually having to remember to limit myself from reading ahead too much.

I use the example of reading because of how important I feel it is to our growth and pursuit of wisdom, but it's the same case for any healthy habit we want to bring into our lives. Slow, incremental goals and dedications, coupled with the progression of time, lead to true change for the better.

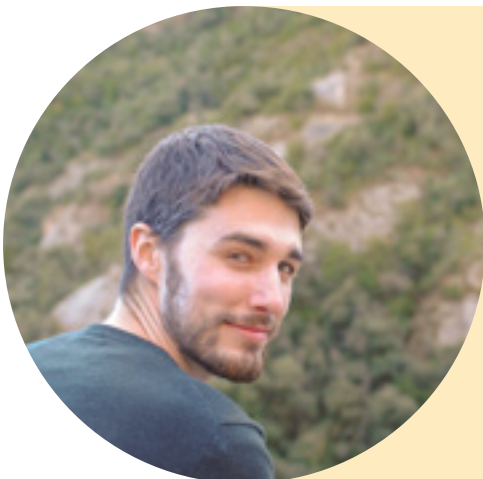
Biohacking is peculiar because it's not quite stuck in a mold of a specific process yet. What I mean is that Biohacking and experimenting on ourselves with new habits and hacks, is many times walking the fence between the known and the unknown. There's some studies and stories relating to certain biohacks, yes, but largely for the most part, we don't have much to go off in

terms of cited references, or they are at least more difficult to find. But biohacking is so essential to us all because of our curious, scientific minds. We want to know. We all desire wisdom. We all want to know what is causing this issue or how we can improve.

We can learn a lot of this from books and other resources, but it's the discipline that we ourselves establish through healthy experimentation, where we truly commit to discovering who we are and what works for us. We put it all on the line for the sake of our health because we are blessed to know that health is indeed wealth. Biohacking, just like any other sport or activity, is something that must be practiced. It's an extension of our scientific brain; a muscle that must be stimulated to grow.

Small, yet continual everyday biohacks, in parallel with effective measurement and tracking, are what lead us to transform into the best possible version of ourselves and firmly plant our revealed identity on the firm ground of wisdom.

ABOUT DALLAS MCCLAIN



Born in the USA, Dallas is a passionate reader of theological and personal development books. He is a devout Catholic Christian and enjoys time outdoors while being 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, daughter and son, 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



A MESSAGE FROM COO JEAN FALLACARA

What is the most expensive mistake you've ever made?

As humans, we are addicted to success, and as a paradox, this addiction led to neglect our mental health. Our contemporary urban culture makes us suffer and neglect some of the basic psychological nutrients.

With advances in technology, there is increased volatility, uncertainty, complexity and ambiguity globally.

We are no longer able to predict where the technology will take us.

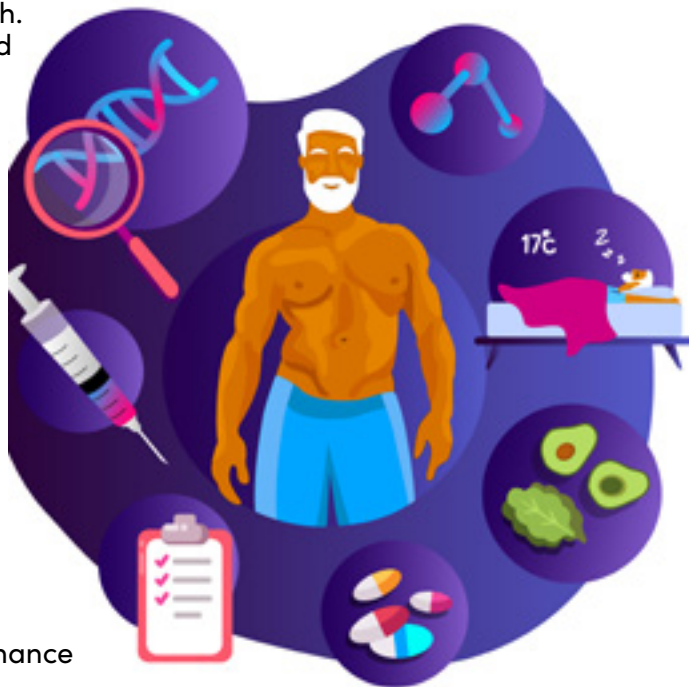
We are caught between peace and prosperity.

"You have power over your mind, not outside events. Realize this and you will find strength." – Marcus Aurelius

This is a simple reminder to remain closely connected with mindfulness.

Identify what you can and cannot control and enhance your self-awareness to enlighten your life.

It is the best biohack you can use for free.



ABOUT JEAN FALLACARA



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 between Boston and Montreal after his biotech company was acquired by inTEST Corp (NYSE:INTT) in October 2021.

Website: jeanfallacara.com

Website: cyborggainz.com



ARJUN'S STATEMENT

"If you want to find the secrets of the universe, think in terms of energy, frequency, and vibration." Nikola Tesla.

We are all made of energy, the food we eat, the air we breathe and everything we absorb becomes energy. Now what we absorb as living beings defines the type of energy we create and store. Good food and environment create good and positive energy, bad food and environment lead to negative energy.

Accumulation of too much bad energy in the body causes illness, it can be one of the reasons why almost everyone is suffering from something or the other. You will hardly find anyone who says they are healthy or free of illness, everyone has something, be it mental health problems, digestive, diabetes, or any of the fatal ones.

To exist in the universe, we need to understand its language, learn about energy. How much do we need? What are clean sources to get them? Why are you consuming what you are consuming?

Ask questions, introspect, question your living, because if we don't question our existence, how else would we grow?



ABOUT ARJUN CHAUHAN



Born in India, Arjun is the master of all trades, the Chief Marketing Officer of Biohackers Update Magazine and a soccer enthusiast. He holds a bachelor's in commerce and a Master's in Business administration, specializing in marketing and human resources. He has 6 years of experience in Content Marketing and is always looking forward to gaining more from life. With a passion towards nature, he is currently in the Foothills of Himalayas, in the northern part of India.



— OUTER

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

— Neil DeGrasse Tyson



BIOHACKING & AGING

THE LOGICAL ANSWER TO DISEASES

During the age of exploration in the early 1600s, explorers and adventurers from around the globe set out in the search of the Mystical Fountain of youth, an elixir that could reverse the aging process. Centuries later, we still are searching for a solution for aging but this time, it is more scientific.

But are we any closer to finding the solution and what does biohacking have to do with it? We recently sat down with Dr Denys Coester, also known in France as “Docteur Denys” for his pioneering work.

“Nowadays, aging is really considered a disease. But does it mean that we have to stop aging? The thing is not to give years to life. The important thing is to give life to years. To live good rather than to live long. You can tell it’s a French thing, in a way. We are very careful in my country to enjoy the process. We have much longer breaks between our work sessions. We have “apéro”. We don’t like to be disturbed for work during our holidays and so on. While in America, there is a big (maybe too much?) emphasis on the performance.

It’s fine to answer the phone when you are on your day off because work is work. But what is performance without pleasure?”

- Dr. Denys

“Health is a very big field between death and superhuman. Our goal is to help the patient go from dead to alive, to survive, to good health and to a long life.” continues Dr. Denys. But it is easier said than done, Dr. Denys recalls that in the last 20 years, there has been a steady increase in chronic diseases such as diabetes, cancer, and Alzheimer’s. It is partly due to the modern lifestyles we have adopted, the food we eat and the lack of mobility. Not long ago, people had to get up every morning, walk to work, and labor the day away. But now, we have cars and elevators; a flight of stairs seems like a task.

This brings us to the second part of the problem, “The problem is that modern medicine does not have a lot of weapons to deal with these diseases”

A new disease came out and modern medicine didn’t have an answer for it, leading to the deaths of millions globally, halting the



entire world, causing panic and chaos. Now, where have we heard of that story before? With the Covid pandemic, the truth surfaced, and most realized the importance of a healthy lifestyle.

“This is why biohacking seems to be a very logical answer to all these diseases. We are looking first to naturally hack our body, our external environment, (food we eat, stress factors, air we breathe...), and also our internal environment, (microbiota, hormones, neurotransmitters...) without any negative side effects, unlike the conventional drugs. It’s logical to go to biohacking to prevent chronic disease, and of course to become a better human.”

But it is not so simple, biohacking like most health-related fields is susceptible to fraud and misinformation. In fact, talking to people at a recent conference, the team of Biohackers Magazine realized that “Biohacking” has become a buzzword for companies to sell their expensive products and supplements.

“If you talk about taking supplements or taking showers, practicing meditation and so on, maybe it can be stupid for a certain person, but when I’m looking for a routine or some supplement, I have always the same reflex: I go to PubMed and look for references. For example, we all know about metformin. We know that metformin is for people with diabetes and they can control their insulin. But we also know that if you don’t have diabetes and you take it, it will not be bad for your health because it’s anti-cancer and an anti-aging drug according to studies.”

“Biohacking is a good method or philosophy because the goal is always to be better. It’s not just an idea, it’s also scientifically based. It’s not just body and mind. It’s emotional, spiritual, and a contribution to mankind. So it’s not just a selfish behavior, it’s of course selfish in the beginning because I want to be better for myself. But if I am better for myself, it’s also to be better with everybody and the contribution to mankind.” stated Dr. Denys
But where should one start?

Most of the time people want to take a lot of supplements right out of the gate. But the first



thing is to have a good way of life, to develop a healthy, sustainable lifestyle. If you don't have a good way of life, nothing works.

There are three steps in Biohacking:

First, you check for imbalances in your body and mind.

The second is to make the correction of the imbalance.

Once you have a stable and healthy lifestyle, that's the beginning of the funnel and we can upgrade everything with biohacking.

As Albert Einstein said, Everything is energy and in our body, energy means taking care of mitochondria. It's really important to make people understand that we have to take care of our mitochondria, we have to take care of our energy. We have to understand that energy is due to meet a conveyor with the ATP creation and ATP comes from what we eat and what we breathe. So everybody has to understand that the first basic need is to take care of their own energy.

A cold shower boosts hormesis and because of hormesis, we have better energy. We also have to stop sugar, because sugar is our kryptonite like Superman. Other simple routines are "energy boosters": avoiding stress, getting good sleep, fasting, ketosis, intermittent intensive training... We also know some supplements to boost mitochondria, but first we have to begin with the basics.

So to conclude, biohacking is not new. The basics of biohacking are the way of our ancestors. The only difference is with biohacking, now we have research and studies backing the methods.

"I think my advice would be to have the reflexes to check the good information. Always begin with the beginning, check the imbalance. We have to be in good shape first and if we have to take some supplements, just take some supplements scientifically based because there's a lot of bullshit."- concluded Dr. Denys

ABOUT DR. DENYS COESTER



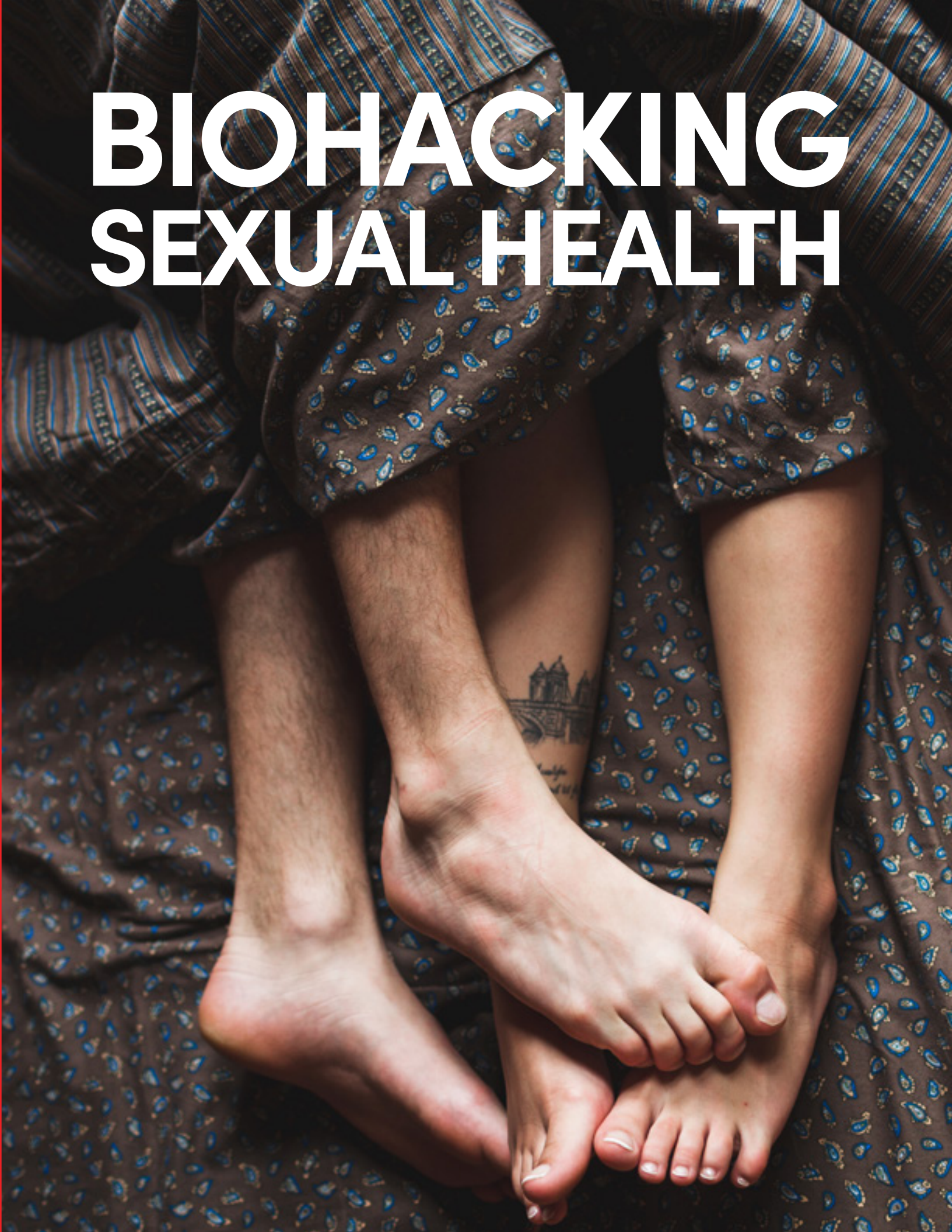
Dr. Denys is the author of the first biohacking book in France. He has been in the medicine field since 1990 and has been invited to share his expertise with some of the most known media in his country, on TV, radio and printed magazines.

He has been published by some of the biggest and most serious publishers in France for whom he wrote 3 books, the latest being on the Secrets of the Immunity. He has been the very first clinician to receive the two anti-aging health diplomas which are officially recognized by the French government.

He is currently teaching at the medical schools of Paris V. Descartes and Paris XII Créteil. Dr. Denys also creates mind-body products for various medical issues: sugar addiction, tinnitus, overweight, pain, nicotine addiction, etc.

Website <http://www.docteurdenys.com>

BIOHACKING SEXUAL HEALTH



“Sexuality is at the core of well-being. However, biohacking sexual health, pleasure and relationships is rarely part of the discussion.

When people think about biohacking, it's often about tracking & optimizing, using technology and supplementing for optimal performance. But in reality, if you don't heal your traumas, if you're not happy in your relationships, how can you become an optimized human being?” - Anna Lindfors, Sexologist at Biohacker Center

When the topic of sexual health arises, it is very rare that it touches upon the subject of sexual trauma due to the stigma surrounding the phenomenon. “Biohacking is about building a lifestyle that works for you via subjective and objective data, re-inventing yourself, forming a meaningful connection with nature through ancestral wisdom and connecting that with modern technology. In order to thrive in the modern world, it is important to realize the difference between surviving and living. Trauma shifts us into survival mode, and it is through healing trauma that one starts thriving in life.”

Trauma is a massive area of our lives that's not spoken about enough, which leaves

“Big T” is a term to describe generally acknowledged forms of trauma e.g., extreme sexual violence such as rape, car crash, or sudden loss of a loved one. Whereas “little t” refers to trauma not yet widely recognized, but that has a profound impact on an individual's life e.g., break-up, unmet needs in relationships (in childhood and adulthood), unsafe sexual experiences.

people blind to the role trauma plays in their lives. Until now, the perception around trauma has been very narrow: focusing on the “Big T” traumatic events and stigmatizing symptoms rather than understanding the neurophysiological mechanisms behind trauma coping mechanisms. Although, more and more research is surfacing, increasing our understanding of “little t” as well and how trauma is formed, the mind-body connection and its role in trauma coping mechanisms. “Trauma is born from the traumatic event, trauma coping mechanisms are individual responses to that event.” continues Anna



This raises an important question: what falls under the category of sexual trauma? The majority of the population has a vague idea of what it means, however, the case remains that it is not a topic that is discussed nearly enough. So first, we need to understand what accounts for sexual trauma.

We need to redefine sexual trauma because it's not only about violence, formed by a debilitating single or repeated event (Big T), but it is an individual reaction to external stimuli that is shocking the system (trauma coping mechanisms). In other words, sexual trauma is not only about the extremes, but can also stem from breaking boundaries and miscommunicating. The birth mechanism is similar to all kinds of traumas, but sexual traumas are especially intimate: they can be born from a single word, look or touch because of the shame and taboos surrounding sex and sexuality. There is so much shame that people have with their sexuality and sex, and that shame itself can be traumatizing. We all experience sexual trauma. They stay deep in our core and sense of self, which is why they're very challenging to heal. But then at the same time that's why sexual healing can be so empowering.

Is our culture around sex contributing to trauma?

"When talking about healing trauma, I think it's important to discuss how to prevent trauma and change the culture contributing to it."

There are a lot of cultural challenges tied to all genders when it comes to sexuality and sex. Women's sexuality and pleasure has been both shamed and restricted throughout centuries. No wonder women experience shame in their own sexuali-

ty and pleasure. This incessant expectation to please their partner leads to women breaking their boundaries (or not have any) instead of appreciating and exploring their pleasure. As for men, eternal pressure on performance and the narrow stereotype of being masculine ("the man") ultimately leads to toxic and damaging behavior. We pretend to be something that we are not due to the quenching need to fit in the culturally prevailing stereotypes of what we think are expected of us. These behavior cycles contribute to ever-expanding trauma cycles. We need to change our entire perception and culture around sex to break these cycles.

There's so much shame around pleasure, our bodies, and the way we look. It's about the deep lack of understanding that builds upon itself conceiving stigma and unhealthy expectations. Proper SexEd in school for children is a crucial aspect of changing the culture of sex: It's not enough to talk about preventing STDs, or pregnancies. Why are we not taught communication skills and relationship skills?

Why are we not taught to be self-reflective, to explore our sexuality? Why are we not taught about pleasure? I mean, we should all talk about pleasure simply for the health benefits!

"Similar to people that are taught $1 + 1 = 2$, we should be taught that $me + you = triggered trauma$ " continues Anna.

Why is sexual violence so prevalent and endemic?

According to the World Health Organization (2021), globally, [one in three](#) women experience some form of sexual violence. What is done to change this? If a third of people had some kind of heart disease or cancer, the approach would



be very different than what it is to violence against women. And while looking at these stats, remember that most cases of violence are not reported, so in reality the number is even higher. For men, the statistics vary immensely around [3-16%](#), but sexual violence against men is even more of a taboo so generalizable and global [studies](#) are hard to find. What could be done to address the root cause of the phenomenon and stop the cycle of violence?

This quote brings to mind an important perspective, there is an imminent danger in society. The issue is that it is a touchy subject to deal with the air of controversy surrounding it. The question is, why are men so violent towards women (and each other)? We should turn to unresolved trauma and learned toxic behavior patterns in our quest for answers.

The society also pushes a sense of culpability on women when they are sexually assaulted. Questions such as what were you wearing? Why didn't you say no louder, why were you nice to him?

These are all questions that need to be banished. What we should ask instead is: why did he assault her? Sexual assault is not the victim's fault, women or men alike, and victim-blaming leads to the survivor carrying the shame of the perpetrator.

As a society, we need to acknowledge and understand trauma in all of its forms. Suppressing it has never been proven successful, it's time we face the problem head-on. For every human suffering a traumatic event there is someone or something inflicting it.

As trauma builds on like sandcastles within us, so do impenetrable barriers, a sort of shield that protects us from the pain that others may put upon us. The danger with that is the feeling

of numbness that then begins to establish itself. Though it may seem almost beneficial to feel fewer emotions, we are human. Emotions serve a purpose, and without them life becomes dull and annihilated.

What suggestions would you give people who want to biohack their trauma?

While sharing many universal characteristics, healing trauma always depends on the individual experience, reaction and coping mechanisms. When biohacking sexual trauma, it's important to focus both on your coping mechanisms (behaviour that occurred in response to trauma) as well as the trigger for them (trauma).

If possible seek professional help and support, especially if it's a case of sexual violence. A professional can guide you first in returning balance to your body-mind to allow for room to then process your trauma. You can't heal trauma when your nervous system is going haywire.

The first step is to balance and stabilize because trauma shocks the homeostasis of the system. Your mind may block the memories because it's protecting you, but your body remembers: trauma is often stored in the body, manifesting itself in many forms e.g., emotional reactivity, low/high arousal & activity, dissociation from the body, chronic illness.

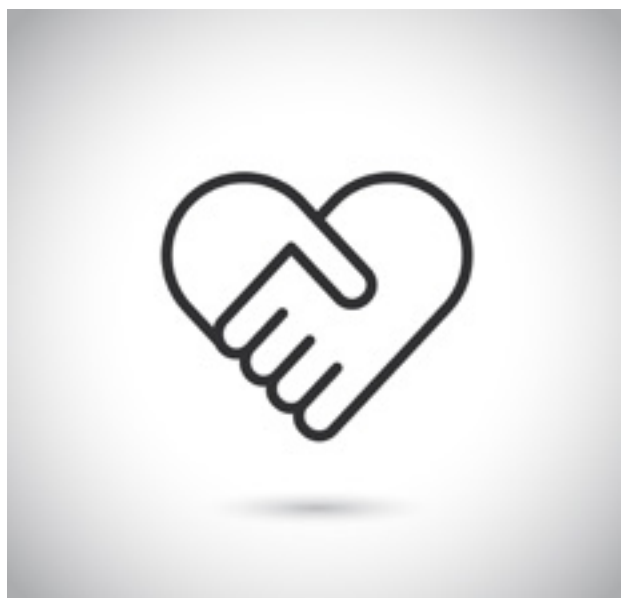
Learn to regulate and balance ANS

Biohacker's basic knowledge is to know about the autonomic nervous system and the dance between the sympathetic and parasympa-

thetic and the role of the vagus nerve within it. When you experience trauma, your nervous system goes on override in its attempt to restore homeostasis. For example, some become hyper-aroused, which means that you're over-responsive to your internal and external environment (e.g., you're very reactive, anxious and agitated 'on the edge'; being still makes you feel stressed). And then there's the opposite of being hypo-aroused, which means that you're under-responsive to your environment (e.g., you feel numb, dull and depressed). Hence, balancing and regulating your nervous system is key when it comes to biohacking trauma. It's about restoring the optimal zone of arousal.

Breathwork is an amazing tool when it comes to balancing your nervous system. When you go into a hyper-aroused state, your breathing becomes superficial. Via breathwork (esp. deep breathing) you can activate the parasympathetic nervous system, and that way restore balance to your body. If you're hypo-aroused, you can boost your nervous system and increase your level of arousal to become optimal.

Another aspect of balancing your nervous system is introducing positive stress to it, which has a hormetic effect (preferably under professional guidance). In this way your body adapts to the stressor developing your resilience, that is,



your ability to tolerate stress. One of my favorites is cold exposure. At first, the freezing feeling is uncomfortable, but when you breathe deeply through it you not only learn to regulate your nervous system, but your body learns that not all uncomfortable feelings are a sign of danger (which is often the case after trauma). This way you re-teach your nervous system to not over-react. In many ways, cold exposure shows you your strength and power in healing.

But it's important not to overstress your system. Rest is crucial for healing but highly underrated. It can often be very difficult for someone who has experienced trauma to rest and stay still. But it is in those moments of stillness that you have space to turn within and process what has happened and how it is impacting your story today. It's not easy, but it's crucial to process what has happened, how to accept it, and how to heal and recreate yourself. And that takes time: healing takes time. Give yourself that time.

How to support someone healing trauma?

There is a stigma in healthcare when it comes to trauma. For example, let's use the name Molly. Molly is sexually assaulted so every time she goes to see a doctor or a therapist, she's seen and treated as the assaulted-Molly. She is seen through her trauma not through herself. That keeps her in that victim mindset instead of supporting her autonomy and healing. The survivors deserve more hope than that: we need to both validate their experience but to also give them hope. The survivors deserve the autonomy to define who they are and how they want to heal. To have these holistic mind-body methods all come together in a way that suits their healing. But in essence supporting someone's healing is about being there and holding space for them, asking what they want, respecting them and their boundaries.

1) Ask them what they want, what they need, and what kind of support they want in processing this?



2) Hold space for them. Really just to give them that safe space and support to rebuild themselves. We often want to comfort and take the pain away, but it's not ours to take as much as we want to.

3) Support their autonomy. They have the body-mind experience of having their boundaries broken. So in everything you do, highlight their autonomy and support that survivor mindset. To rebuild that, it's very important to respect their boundaries.

4) One method to co-regulate the nervous system is to practice with a friend. Again, always ask for consent. One very effective way is to put your hand on their chest and have their hand on your chest. And then you take a deep breath to activate the parasympathetic nervous system. This way you can help them regulate their nervous system.

So what can you do to enhance your sexual connection with yourself and others?

“Unresolved trauma prevents you from forming truly intimate connections and fully surrendering to pleasure. That’s why it’s also the key to unlocking pleasure and healthy relationships.” Enhancing sexual connection and pleasure starts from increasing your self-awareness and getting to know yourself. Acknowledging and understanding your triggers (what makes you tick and why?) and challenges with sexuality and sex. Addressing these issues is a crucial aspect of building a healthy sexual self-concept.

If you want to find a way to enact your sexuality and feel empowered, feel pleasure in a way that’s not disrespecting other people’s boundaries. Learn to understand and communicate what your boundaries are, and then discuss with your partner.

Boundaries are such an elemental yet foreign concept for many. Basic self-reflection in evaluating sexual experiences can not only raise a sense of safety but



elevate your level of pleasure. Ask yourself: What am I comfortable with? How do/don't I want to be touched? Many trauma survivors, especially when boundaries have been broken, end up breaking their own boundaries as a trauma coping mechanism. Unlearning such trauma coping mechanisms and learning to set healthy boundaries is a key aspect to healing trauma.

Communicate consent. Consent doesn't have to be like a contract, but should rather be seen as the foundation of sex. Because let's face it, everything but consensual sex is abuse. We need to change the culture around consent and enhance communication when it comes to sex. It's about knowing yourself and getting to know the other person in a way that feels comfortable for both. And communicating consent is sexy e.g., Can I kiss you? What kind of touch do you enjoy?

Conclusion:

- 1) If you don't heal your traumas and build a healthy relationship with yourself, none of the cool technology stuff and supplements really make a difference. So start the journey of healing your traumas and get support for it.
- 2) Heal sexually, get to know yourself, get to know your pleasure. There are many ways to do that. But really just to start that journey and exploration is so vital.
- 3) Increase pleasure in your life, not just sexual. It's about how you eat, how you drink and taste that bulletproof coffee, the sensations of warm (or cold) showers. It's how you feel about yourself and move your body. When you go outside, pause to feel sunshine on your skin. Pleasure is in everything, not only behind the bedroom door.
- 4) Be present with yourself. Be mindful of how you connect with others.
- 5) Communicate your boundaries, desires,

ABOUT ANNA LINDFORS



Consultant at Biohacker Center, Co-author of "The Resilient Being", Co-founder of iXES - a sexological startup promoting women's health and pleasure

Anna Lindfors is a biohacking sexologist specializing in sexological therapy. Through her profession, Anna sees how prevalent challenges with sexuality are: we all experience them. Her passion is to promote sexual health as part of holistic wellbeing and bring back pleasure to ALL areas of life. That's why she co-founded iXES - a sexological startup promoting women's health and pleasure. Stay tuned!

Connect with Anna on Instagram ([@healwithanna](#)) to learn more about optimizing sexual health, book an individual consultation, or simply share your experiences!

THE RULEBOOK OF PEAK PERFORMANCE, EMOTION AND BIOLOGY



Growing up, I spent a lot of time around horses. They always intrigued me due to their sheer size and strength. I'll never forget the moment when I saw a pure thoroughbred standing in an open paddock. He towered over me, holding more power in one of his rear legs than I had in my entire body. I noticed that he wasn't moving, even though he had a massive open space to run free. As I got closer, I noticed a rope tied around his neck and chest. The rope was attached to a small, thin pole wedged halfway into the soil. It blew my mind how this powerful animal was being kept in place by something he could rip out of the ground effortlessly. When I asked his owner why this was the case, her answer completely shifted my model of the world.

"When he was just a young colt, we tied him to this exact same pole. He pulled as hard as he could to get free. He pulled for hours and hours. Each day he pulled a little less. By the third day, we checked in on him and found him standing, grazing peacefully, he had stopped pulling completely and just accepted it. I guess he finally decided it was a smarter move to save his energy and not try at all."

This story has stuck with me for years. It was clear that the horse was powerful, far stronger than he had ever been before. But his person-

al rules, his beliefs about what was possible for him, denied him access to that power. He could have easily ripped that pole out of the ground and run free, yet he never had the impulse to do so based on a decision he made years prior.

Our personal rules, the decisions we have made about what we are capable of, dictate the emotional states we experience, our motivation to act, and ultimately, how we perform in our day-to-day lives. They are the difference between feeling confident, motivated, and driven and feeling anxious, doubtful, and even apathetic about making changes or pursuing goals.

These personal rules give us guidance, they tell us what is worth spending energy on and what is not. Our brain has one priority above all others: Survival. In order to survive, we must conserve energy. If we expend all our energy on tasks that don't achieve anything, we will have nothing left to ensure we have food, shelter, and the ability to protect ourselves. The horse made that decision on the third day. He decided that his efforts were not achieving anything, so he may as well conserve energy and direct it toward more important things.

The same thing can happen in our own lives. If we try and fail at something, whether it is building a business, having an intimate rela-



relationship, or studying for a test, we can get to the point where we finally decide “I can’t do this”. Once that becomes our personal rule, our brain acts accordingly. Why would we want to put energy into something that will fail anyway? Why would we do something that is going to make us feel like a failure and endanger our sense of security?

This system works. We conserve our energy and can direct it elsewhere. But there is one key factor that gets overlooked: GROWTH. Maybe we didn’t have the ability or skill to make our business a success. Maybe that relationship wasn’t right for us. Maybe we needed to study harder for that test. But we can get better, form new strategies, come back stronger. Just like the colt growing into a powerful horse, we can increase our personal power and overcome those challenges.

So why do we so often not come back and try again?

The brain and its primitive need for survival come into play once more. The brain doesn’t often update its rules. Why? Because change takes energy. Change poses a risk. What if we change the rule and get harmed? It’s worked so far to keep us safe, so why change?

Our brains will always prioritize safety and security over growth and change.

It is our job to override this primitive response so we can expand, update our personal rules and reignite our motivation, drive and focus to tackle our challenges head-on. Let me share an example of how this manifested in my own life. I have been involved in public speaking for years. I can now comfortably talk to a large audience without much anxiety and fear. It certainly wasn’t always like this. I was once presenting to a group of about 30 people on the topic of nutrition and detoxification. I had prepared well and was ready to go. I jumped in and gave my all, I was clear, concise, and full of energy. But when I began to seek feedback from the audience...Nothing. As I noticed this, I

began to feel more and more anxious. This began to impact my performance, I started fumbling my words, speaking rapidly, and making mistakes. When it came to the end of the session, I made my pitch to the audience to sign up for 1-1 consultations as I normally did. I usually had a conversion rate of about 70%, and that day, I got 0. I continued to shuffle uncomfortably through the presentation until I eventually called it a day, packed up, and briskly left the stage. Ouch.

Up until that point, presenting had been something I enjoyed and excelled at. After that session, I pulled back. I avoided speaking engagements, cancelled seminars, and, when I had no choice but to present, was ravaged with anxiety and stress. The embarrassment I experienced during the botched presentation had jolted my brain to update its personal rulebook “You are NOT good at this”. “If you were good, you wouldn’t have looked like a fool up there”. Were these things true? No, but my brain cared more about conserving my energy and keeping me safe from the feeling of rejection than it did about my personal growth.



When our brain creates these personal rules, it starts a chain reaction that looks like this;

Step 1 - Traumatic event: EG. Failure, Loss, Endangerment

Step 2 - Personal Rule: formed for protection and energy conservation: "I can't do this" "I am going to mess this up like I always do" and "This will never work".

Step 3 - Biological and Emotional reaction: Stress hormones flood the body, and we prepare to fight, freeze or flee from this perceived danger. Our energy is not focused on performing well, it is focused on ensuring safety.

Step 4 - Action/Inaction: We behave and perform according to this rule and emotion, NOT according to our actual level of ability.



The dangerous thing about personal rules is that they become ingrained in our subconscious.

Meaning that they operate outside our current awareness. The horse most probably wasn't thinking to himself "I can't escape from this anchor", he simply accepted this as a fact and acted accordingly, on autopilot (Disclaimer: I am not a horse whisperer, I have no clue what horses think about, but the principle remains!). Just like gravity, we don't consciously think about it, but we go about our day accepting it as a fact and acting accordingly. There may be things you want to do or achieve but haven't done. You may have a feeling of dissatisfaction or unhappiness in an area. The problem is not that you can't make a change. The problem is that your personal rules are set up in a way that makes you feel, automatically, that you don't have the power to make a change. You may never feel the surge of motivation and drive to make the change, or when you do, find that it doesn't last. You are not performing at your peak in making that change because your personal rules have switched off the cascade of positive emotion and biology that will fuel your progress and your highest level of ability.



So, whatever change you want to make, whatever area you want to improve your performance in, ask yourself.

“What are my deepest beliefs about my abilities in this area?”.

My bet is, you will find that your personal rules are self-defeating. They're old rules that you decided on years ago, based on an outdated version of yourself. You are living life as a powerful horse based on the rule book of a younger, less capable colt. You can easily break free of the limitations holding you back but when you play a new game with outdated rules, you're bound to struggle.

If we want to upgrade our life, we must upgrade our performance. To upgrade our performance, we must update our personal rule book.

Keep
GOING
Keep
GROWING

ABOUT RORY JOHN O’SULLIVAN



Rory is a South African born coach, speaker and trainer on Biohacking and Peak Performance with a mission to help ambitious, purpose driven people unlock peak performance and their highest potential.

Transitioning from a career in Law, he turned toward his passion for personal development by working as a Personal Trainer, Nutritionist and Life Coach with a background in Neuro-Linguistic Programming. Working with people 1-1, running workshops, and delivering talks at events and retreats in South Africa, Kuwait and Qatar, Rory hopes to increase his ability to positively impact those who want to get the very best out of themselves each day.

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INNER

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

— Matshona Dhliwayo

THE CLOCKS WITHIN

Inside of us we have clocks referred to as biological clocks or rhythms that control everything from sleeping, waking, hormones and more. These clocks are influenced and kept going by the things we do and are exposed to. When these clocks are working efficiently, we function and adapt exceptionally well but when they are disrupted or manipulated the wrong way our health suffers greatly. Believe it or not, it is believed that we have 4 main biological rhythms.



The circadian rhythm

In 1729 a French astronomer by the name of Jean Jacques d'ortous de Mairan placed a mimosa plant in a dark room and noticed the plant would come alive during the day but dormant during the night and this was the first recorded time the circadian rhythm was observed. Our circadian rhythm is one of the most powerful and most talked about biological clocks as it regulates our 24-hour sleep/wake cycle.

How does it work? The retina of our eye is essentially an extension of our brain; it absorbs light through cells called cones and rods and passes it on to a part of the brain known as the SCN or Suprachiasmatic nucleus which is the master clock of our circadian rhythm. In today's world we are often in environments engulfed by artificial lights such as LED, which emit artificial blue light frequencies and it is these wavelengths that disrupt our circadian rhythm; in fact, they cause something known as phase shifting which is our body being tricked into thinking it is solar noon. This also happens if you wake up in the morning and look at your cell phone before seeing sunlight. This process alters the rate and release of hormones causing disruptions in sleep, energy levels, mood and even aging. As a manual therapist and biohacker, I often see individuals suffering from some kind of circadian imbalance. Beyond our sleep/wake cycle our circadian rhythm does much more; it orchestrates and influences dozens of neurological and physiological reactions such as metabolism, mitochondrial function, temperature regulation and more. The efficiency of our circadian rhythm dictates how well we perform as a whole.



The infradian rhythm

This rhythm is an internal clock that exceeds the 24 hours clock. It is important in biological cycles such as the female menstrual cycle.

The diurnal rhythm

An internal rhythm that when synchronized goes primarily off the 24 hours of the circadian rhythm but is more active during the day and influences mental, physical and behavioral changes through the course of the day.

The ultradian rhythm

This internal clock is a much shorter period than that of the circadian rhythm and influences rhythms that control heart rate, thermoregulation, appetite, blood flow and even eye blinking.

As mentioned earlier today's environment is more often not a positive influence on our circadian rhythm due to artificial light, Non-native EMF's and poor sleep habits. Creating homeostasis in our circadian and biological rhythms allows us to function more effectively and efficiently.

Here are some ways to improve our circadian rhythm

- 1) Sleep in a pitch-black room – even a little bit of light can throw off your sleep
- 2) Get sun early and at sunset – our biological natures love Infrared and red-light frequency
- 3) Use warm lighting such as vintage incandescent Edison bulbs or circadian lighting in your home
- 4) Monitor sleep quality – lots of high-tech stuff available to do just this
- 5) Exercise – Studies show morning exercise improves circadian balance
- 6) Cold shower in the morning

ABOUT RAYMOND GONZALEZ



A Manual Osteopath, Holistic Nutritionist and Performance Specialist specializing in bio/Neuromechanics and Molecular health. Currently living in Guelph, Ontario, Canada with his wife and children. When not spending time with family Ray is exploring and researching the deeper intricacies of human nature and how we can best evolve.

[Instagram: thebio_chemist](#)



**IS MICRODOSING A
SPECIAL FORM OF
BRAIN PRIMING?**

The concept of psychedelic Microdosing is moving in waves throughout society and offers strong promise in many areas from depression to creativity and performance. Science is rapidly pursuing quality research to fortify the numerous positive anecdotal reports that move from friend to friend and often into social media.

So, a question could be...is Microdosing an entirely new process or does it have any history that could support the claims?

Let's talk about the principle known as 'Brain Priming'.

About Brain Priming - Fundamentally, the brain is always trying to make sense out of nonsense - finding signals in the noise. Brain Priming works to optimize the search for new signals amidst that noise. Call it adaptation. Call it new learning. Call it neuroplastic change.

It is possible to increase the "learning" efficiency of the brain by preparing it with sets of sensitizing signals that allow for better message recognition and integration. Brain Priming is the influence that a previous experience has on our likelihood of responding in a particular way later on.

BASICS OF BRAIN PRIMING:

Scientifically, Brain Priming was first investigated in the field of behavior-based psychology in the 1950's and then later semantically in the 1970's. It became apparent that semantically (meaning "involving words"), when a person was shown a word from a certain topic, the person would then be able to more quickly recognize another different word that was also from the same topic. For example, if first shown the word "doctor", the person would then more easily recognize the word "nurse" within a group of unrelated words.

In general terms, there are two types of "brain priming": 1) Psychological Priming and 2) Physiological Priming. Certain methods can integrate the two forms in sequenced or overlapping processes.

Priming represents an example of what is often referred to as implicit memory - a non-conscious influence of past experience on current performance or behavior. Priming is often assessed with experimental tasks that do not require conscious recollection of particular previous experiences.

Brain Priming presents a range of creative design possibilities. In designs, two approaches can be considered. The first is more direct and is known as "modal-specific". This means the priming action is directly related to the following main action. The second design approach is called "cross-modal". In cross-modal, the priming action is not directly related to the main action and acts indirectly to facilitate the subsequent main action.

An example of "modal-specific" Brain Priming could be Movement Priming in which the person gently rehearses the motions they will use in the subsequent main action. Picture a basketball player, softly rehearsing his free-throw attempt at the foul line before they take the actual shot.

An example of "cross-modal" Brain Priming could be "semantic" in which the person mentally repeats positive words or phrases associated with calmness or confidence before engaging in the subsequent main physical action.



Priming is often the result of a three-step process:

1) First, a person is exposed to a priming stimulus, which could be any of the six types (described further below).

2) Second, the priming increases accessibility in the aspect of the brain that is related to the priming message. This increases the likelihood of better encoding the main signaling which will follow.

3) Finally, the newly activated representations result in an increased integration of the main signal messaging.

There are two apparent neural mechanisms for priming: gating and homeostatic plasticity.

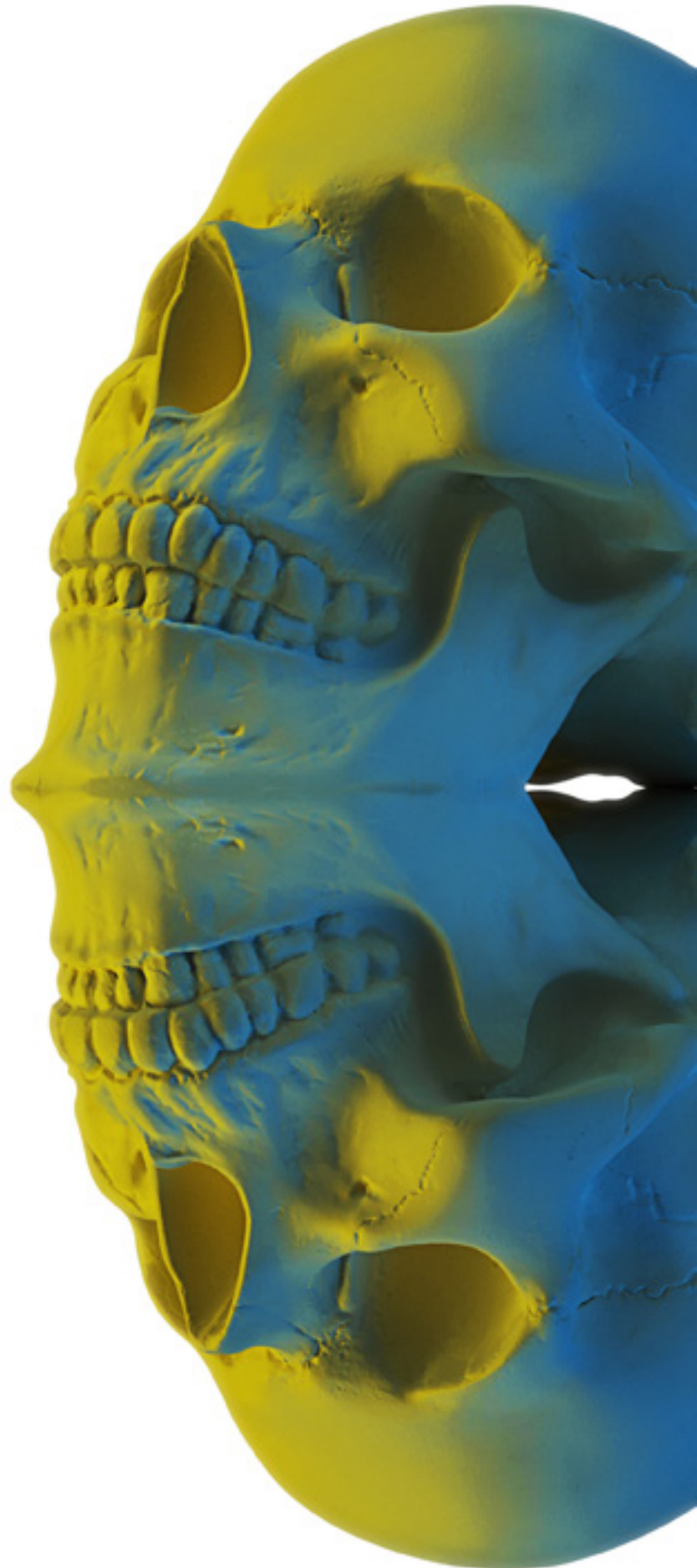
Gating occurs by disinhibition of intracortical inhibitory circuits. It is a neurochemical action involving calcium. Gating is instantaneous and happens simultaneously with the activity.

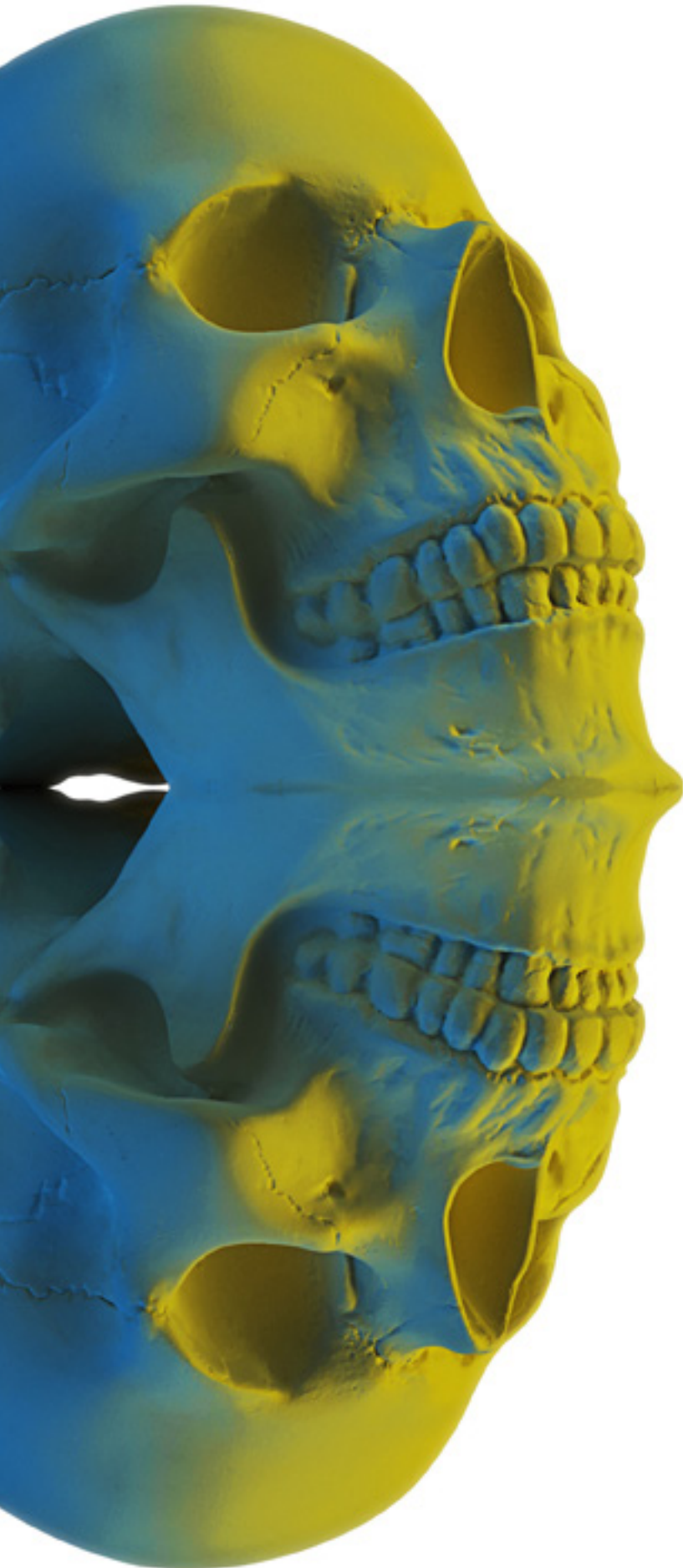
Homeostatic plasticity is the ability of neurons to increase excitability after a period of low synaptic activity is related to changes in postsynaptic glutamate receptors. The time scale of homeostatic plasticity takes place over a longer period of time when compared to gating. The state of the neurons is modulated prior to motor training in order to induce synaptic plasticity.

So, gating is involved with the priming effects that are simultaneous with the main action while homeostatic plasticity priming effects modulate the neurology before the main action. With this in mind, it becomes easier to appreciate the variations in Brain Priming methodologies.

Technically, when considering physiological Brain Priming, the term “cortical neuroplasticity” is common especially in rehabilitation techniques. Priming prior to traditional therapeutic interventions, such as manual and exercise therapy, are capable of improved clinical outcomes.

We all want our brain to be healthy and function well. Knowing confidently that





even our adult brain can still keep learning and changing through neuroplastic adaptation opens up a long list of action strategies. Prepping that adaptation with various forms of Brain Priming makes a lot of sense. Much of childhood adaptive learning comes from natural imitation and mimicry. Adult adaptive learning can benefit from the same, no doubt.

The brain priming paradigms that are supported by the greatest amount of evidence are:

- 1) Psychological/Semantic – based (eg. verbal language/body language)
- 2) Energetic Stimulation – based (eg. electromagnetic);
- 3) Mental/Motor Imagery – based (eg. visualization/mental rehearsal);
- 4) Sensory – based (eg. light/sound activations - neuroVIZR.)
- 5) Movement – based (eg. rehearsal pre-task no-load movements);
- 6) Pharmacological – based (eg. ingested compounds including psychedelics).

Considering the list above, it is easy to recognize that the methods and techniques considered to be Brain Priming are increasingly dynamic and expansive. The unifying principles also appear to fit nicely into the features of neuroplastic brain change. In neuroplasticity methods, the logical “state to trait” condition is foundational. Another way of expressing it is initial “activation” followed by “installation”.

WHAT NEUROPLASTICITY TEACHES US ABOUT BRAIN PRIMING:

The “plastic” capacity of the brain opens the door to techniques that more efficiently advantage this ability of change. A Brain Priming action is intended to make the initial short term “state” or “activation” stimulation more effective. One could say that a Brain Priming activity better potentiates the effects of any neuroplastic “activation” process.

We also know that the neuroplastic “trait/installation” change aspect requires regular reinforcements of “Fire Together to Wire Together” principles. So, it doesn’t take much to begin to see that the neuroplastic brain capacity for change integrates with the potentiating features of Brain Priming which also nicely overlap with the regular and repetitive characteristics of “pharmacological” Microdosing methodologies.

MICRODOSING:

Back to Microdosing – basic

ally, the idea of Microdosing is to use a low-dose, sub-clinical psychedelic compound to potentiate a psycho-neurological shift or change. Originally, the process was enabled by either LSD or psilocybin. Currently, many other compounds are involved experimentally which supports the concept of a “potentiating agent” rather than a chemical limitation specifically to either LSD or psilocybin. The “potentiating agent” may in fact extend even beyond biochemical psychedelic compounds into biophysical “potentiating agents” as exemplified by the neuroVIZR Light/Sound approach known as Lucid Microdosing.

In conventional Brain Priming, pharmacological agents are among the oldest and most common adjuvants for inducing priming effects. The principles behind pharmacotherapy as an approach to motor priming have been mainly developed from animal studies and conflicting results are seen in human studies. Based on successful animal studies, five groups of pharmacological agents have been proposed to enhance motor recovery after neurological injury: amphetamines, dopaminergic agents (DA), norepinephrines (NE), cholinergic agents (ACh), and selective serotonin re-uptake inhibitors (SSRI).

Focusing specifically on the last item (selective serotonin re-uptake inhibitors – SSRI) and aligning them for comparison with the well-known serotonin dynamics associated with certain psychedelics, it seems like an obvious first step for consideration.

Generally thinking, once accepting that pharmacological agents (listed above) can act as effective Brain Priming “potentiating agents”, it is but a very small step to consider the probability that psychedelic compounds, in proper sub-perceptual doses, can also act to support the integration of subsequent stimulation and information.

BACK TO BRAIN PRIMING:

In conventional physiology, it is recognized that the vast majority of self-regulation and adaptive functions occur at either subconscious or unconscious levels of awareness. This perspective integrates nicely with the fundamental appreciation that various Brain Priming techniques can act efficiently at unconscious levels (aka “implicit memory”). Conscious attention and/or awareness may or may not be required for a Brain Priming process to yield an effect. Remember that the principle of Brain Priming (as stated above) is the influence a previous experience has on our likelihood of responding in a particular way later on.

Here is (simplified) an example of psychological semantic Brain Priming:

- 1) Two homogenous groups of people were separated into Group A and Group B.
- 2) Each group was given a list of words with letters scrambled.
- 3) The (seemingly) simple task was to unscramble the letters to discover the original words:
- 4) Unknowing to the groups, Group A was given a list of negative words (eg. hate, war, fight, etc.) and Group B was given a list of positive words (eg. love, compassion, friend, etc.);
- 5) The directions given were to unscramble the words and then go into an adjoining room and report your results to the study director who was waiting at a desk in the adjoining room;
- 6) BUT...also unknowing to the groups was the fact that the experiment also involved having another unrelated person standing at the desk of the study director and being en-



gaged with the study director in such a way as to obstruct the group person attempting to make their report – the actual experiment was designed to measure the amount of time the reporting would wait (aka be patient and tolerate) before interjecting into the obstructing conversation;

7) You guessed it...the Group B (with positive words) waited about 8 minutes before interjecting themselves while the Group A (with negative words) waited about 3 minutes;

8) Result – unconscious semantic Brain Priming with positive words enforced subsequent patience and tolerance while Brain Priming with negative words enforced subsequent impatience and lack of tolerance.

IS MICRODOSING A SPECIAL FORM OF BRAIN PRIMING?

There is a good argument for saying YES, Microdosing is a special form of Brain Priming. And, if so, this perspective can certainly give a strong push to validate Microdosing based

on reasonable and acceptable psychophysiological precedents in accepted science. Categorically, as a special form of Brain Priming, Microdosing would be a pharmacological/compound, cross-modal approach relying principally on sustained long term homeostatic plasticity dynamics for induced neuroplastic change. That's a mouthful!



ABOUT GARNET DUPUIS



Garnet was born and raised in Canada and is a naturalized USA citizen. He is an Integrative Health and Wellness expert, teacher & inventor with specialties in inter-disciplinary methodologies. With a wide experience in advanced technologies, Garnet has taught neuromodulation applications in major USA universities, professional sports teams, the Marine Corp and Naval Hospitals and lectured in European and Asian countries.

Garnet has a broad education including college, university and graduate trainings in Classical and Clinical Homeopathy, Oriental Medicine, Massage Therapy/Bodywork, Hydrotherapy, Remedial Exercise, Biofeedback, Psychology and English Literature. Garnet is co-founder of Lucid Studios/neuroVIZR, Thailand. He currently resides in the tropical mountain rainforest in Northern Thailand. He is a life-long meditator and practitioner of Tibetan Dzogchen. Garnet is active in wild animal rescue and conservation and has built, manages and funds a sanctuary for SE Asian apes.

Webiste: <https://neurovizr.com/>

MITOCHONDRIA: BEYOND ENERGY



The Mitochondria: The powerhouse of our cells, the original probiotic and the origin of us. Most of us learned about these organelles in 9th grade biology especially in relation to plants and many of us already know that mitochondria produce 95-97% of our body's energy in the form of ATP but what most neglect to pay attention to is the fact that mitochondria is the thing in we evolved from 1.4 billion years ago through a process known as endosymbiosis where a proteolytic cell (single cell) evolved into a eukaryotic cell (multi-celled) organism.

Although we often look at mitochondria as power central it also plays many other important roles such as regulating immune function, producing steroid like chemicals and even regulating stem cells to name a few. Let's dive in and learn about these powerful life-giving organelles.



Mitochondrial DNA

Mitochondria possess 37 genes which we inherit from our mothers and these pieces of crucial DNA are 1000 times more easily damaged than nuclear DNA. Everything we do in our day to day lives influence gene expression and how our mitochondria function.

Mitochondria and immune system

Mitochondria respond to all forms of threat and stress from viruses to general inflammatory responses we may experience through the day, in fact scientists and the medical world acknowledges that 300+ illnesses and diseases are linked to mitochondrial dysfunction. In my opinion every disease, illness and inflammatory response has a mitochondrial link due to the nature of its functions.

When we experience trauma or threats, our cells facilitate an integrative stress response or cell danger response and this reaction, although an innate and primal protective mechanism for our bodies, can create a series of problems for us as our cells get locked into this pattern and act like a broken loop of information where they may perceive the same traumatic information over and over again. When this happens, we cannot heal or produce important mechanisms such as apoptosis and programmed cell death. Both are mechanisms we need to heal and rid the body of damaged cells. When our cells are unable to take appropriate actions to the threats we are exposed to, we open up the door for chronic issues. We must make a conscious effort via nutrition, movement, proper light exposure, etc. to make our cells feel safe again. This topic has become a topic of interest in the world of regenerative science so much so that scientists have been working with peptides to help turn off that stress response when needed.

Mitochondria and light

Biophotons are a type of light produced within our cells through an oxidative metabolism response that occurs in mitochondria. These biophotons are used to create a com-

munication network between cells. Our mitochondria love light especially infrared light which helps influence ATP production and strengthens mitochondria, which may influence mitochondrial biogenesis (the formation of new mitochondria)

EZ water

Mitochondria create a special type of water known as EZ water or exclusion zone water. This process occurs at the end of the electron transport chain when oxygen is converted into water. The water acts like a charged battery providing energy to cells and promotes mitochondrial integrity. This form of water, also known as the fourth phase of water, improves nutrient absorption from cell to cell and acts as a communication network of its own.

Produce heat

Mitochondria produce temperatures upwards of 50 degrees Celsius via bio-energetic protein membranes within the cell. This ability to create heat assists us in physiological processes such as metabolism.

Hormones

Mitochondria use an enzyme called CYP11A1 to convert cholesterol into pregnenolone, a precursor chemical that leads to the production of sex hormones such as testosterone, estrogen and progesterone.

Redox

A cellular metabolism response within mitochondria, this process creates a balance between Reactive oxygen species and Reactive nitrogen species. When there is an imbalance between these two, our bodies create pro-oxidants which lead to oxidative stress and cell damage.

These are just a few important functions that the mitochondria play and as you can see keeping them happy is very important; after all mitochondria are the gateway to health and disease. Mitochondria are a key element in the human blueprint, and we should pay more attention to them as I truly believe the



future of regenerative medicine and health is in the study and advancement of mitochondrial health.

Ways to biohack your mitochondria

Sunlight

Exposure to morning sun and sunset allows us to soak in natural red light and infrared light which elevates NAD⁺ and NADH, the precursors to ATP. Sunlight also changes the structure of water within the cell (EZ water) to improve energy transfer and nutrient transfer.

Movement

Movement being a very primal and natural thing for us is very important to our mitochondria as the more we move the more demand there is for our mitochondria meaning more energy and the creation of new mitochondria. Studies have shown exercise promotes

efficiency in mitochondrial function, growth and also improves oxygen efficiency by reducing the size of respiratory proteins within mitochondria making the flow of oxygen in blood and cells more efficient.

Supplement with PQQ

Pyrroloquinoline Quinone or PQQ has been shown to improve mitochondrial density and function which increases the rate of mitochondrial biogenesis (production of new mitochondria). Some foods high in PQQ are Papaya, Kiwi, Green Tea and Green peppers.

Red-light therapy

Although sunlight is the best source for this you can also purchase red light therapy devices which give you concentrated red light and near infrared light which can boost ATP production and enhance the function of mitochondria among several other benefits.

Cold thermogenesis

Exposure to cold has been a hot commodity of the past decade and for good reason; exposure to cold water enhances mitochondrial function and immune system health 10-fold. Cold therapy also causes a physiological effect known as the mammalian diving reflex,

which stimulates mitochondria, the Vagus nerve and more.

Nature exposure

We know about the amazing benefits of grounding or earthing which is when we connect ourselves to the earth's natural electrical magnetic fields. This has been shown to reduce inflammation. Taking a hike through the forest exposes us to natural chemicals in the air by trees such as phytoncides which contain antioxidant compounds, improving mitochondrial function.

Antioxidant rich foods

Blueberries, Goji berries, Acai berries, Pumpkin and my personal favorite Chaga mushrooms as they contain one of if not the highest Antioxidant value on the planet.



ABOUT RAYMOND GONZALEZ



A Manual Osteopath, Holistic Nutritionist and Performance Specialist specializing in bio/Neuromechanics and Molecular health. Currently living in Guelph, Ontario, Canada with his wife and children. When not spending time with family Ray is exploring and researching the deeper intricacies of human nature and how we can best evolve.

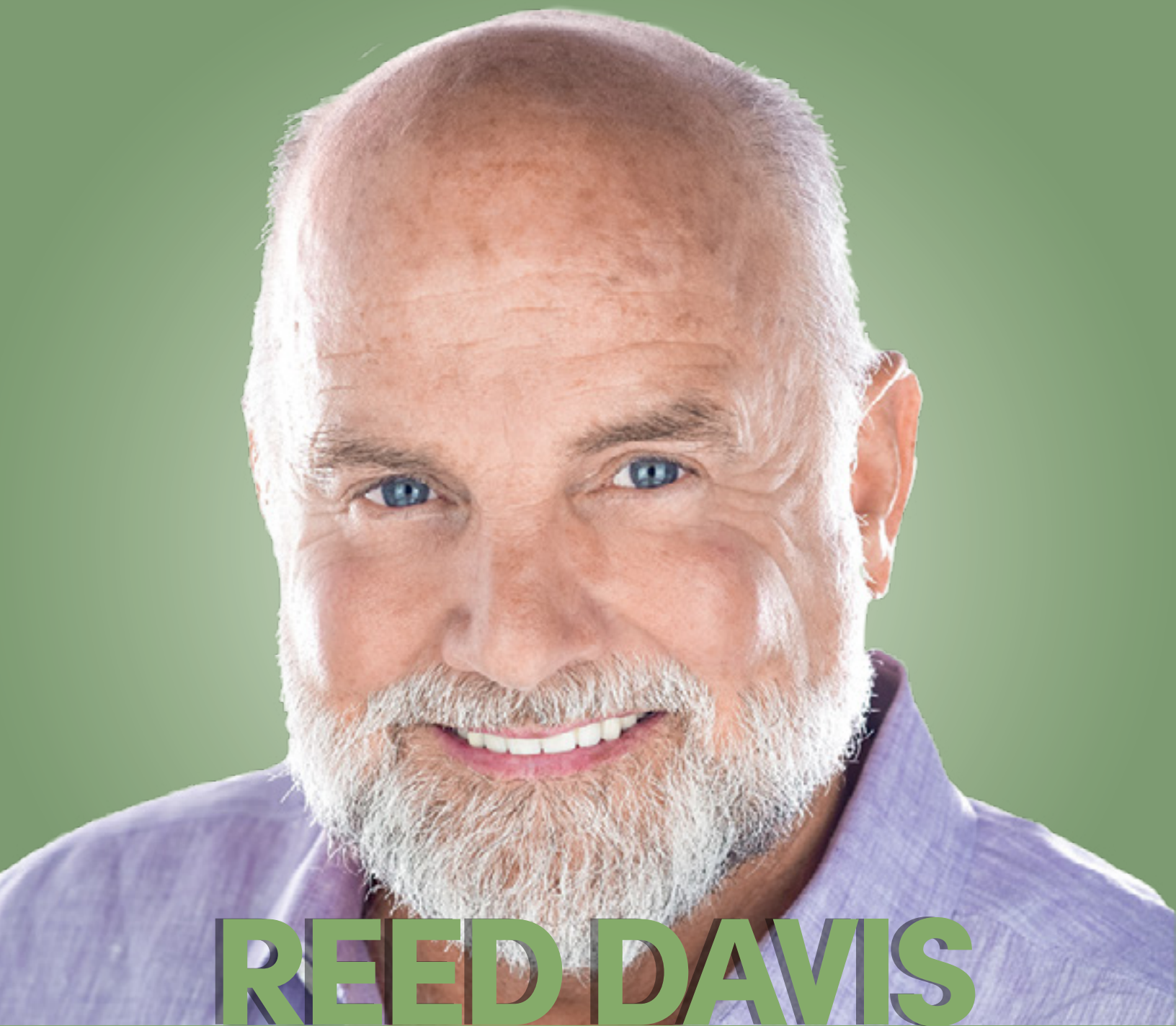
[Instagram: thebio_chemist](#)

An abstract digital graphic featuring a central bright white and yellow spot that radiates outwards. The radiating lines are primarily blue and purple, creating a sense of depth and energy. The overall composition is symmetrical and has a futuristic, digital aesthetic.

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



REED DAVIS

EXCLUSIVE INTERVIEW

***Nutritional Therapist,
Fitness Coach and
Founder of Functional
Diagnostic Nutrition***

Reed has over 10 years of experience in the wellness and health industry. He started this whole functional diagnostic nutrition just to get to the bottom of health issues. Reed had 10 years of experience in the health coaching and teaching field when he first started, and now he's helped over 10,000 people and trained over 3000 FDN people that started their own clinics in over 50 countries.

What is it that pushes you or motivates you, and what motivated you from the beginning to start this whole practice through your company, functional diagnostic nutrition?

Good question. I had been in the environmental law field and was cleaning up the planet, saving the air, birds, water, trees, bees, and all that. Then, in the late nineties, I thought, what about people? Including me! I was in great shape, but I didn't want anything sneaking up on me, so I changed careers. I went to work in a wellness center and was still doing a lot of good in the world. I always wanted to help people. But what bothered me, Dallas, was when I started working there and meeting with patients, I noticed that everybody walking in the door seemed like they'd been to 6 - 10 different practitioners already. I hadn't really been to a doctor myself except for sports injuries and some dental work, so I didn't know what it was like. I didn't know how bad it was, so to speak.

I was out riding my motorcycle one day and I was just thinking, "God, these people's lives suck and why are they taking it? Why are they putting their health in the hands of someone else in the first place? So, I was kind of upset that all the patients coming in were caught in this "cycle of trial and error" - trying one thing, trying another thing. A lot of them had been told by their doctor that nothing's wrong with them. And they knew there was, it just didn't show up on the blood work. And so, they were left to struggle and go from one place to another, but not getting results. The moral of the story is that I decided I was going to be the last



person they needed to see. This was very naive thinking at the time. That's why I decided, "I'm going to find out what's wrong with you and then help you fix it." And so that began my mission- well over 20 years ago to get to the bottom of people's health conditions.

So, when you started the FDN, did you see an initial struggle in getting clients to transform their minds from that industrialized medicine approach to a more preventative care lifestyle, and then could you describe your approach to healing the body?

I think in a way I was following them, but also following some beliefs that I held very firmly. I read a book when I was 19 years old called

'Healing Ourselves'. It's about being responsible for one's own health. So, it just seems like people (coming in our clinic) were attracted to that. We were kind of an alternative wellness clinic anyway. People were coming in looking for something different. We had nutrition, chiropractic, and acupuncture care and then we started running labs. I started showing people in black and white what was going on inside their bodies, that they had no clue about, and their physicians weren't running those kinds of tests.

I never really had any trouble attracting clients. I would go out and give talks and always grab a handful of clients. I built a huge practice, one of the busiest in the country. I was known as a nutritionist who ran labs. The idea of "health coaching" and FDN, wasn't around back then. I just worked hard, ran labs, figured things out, recognized patterns, and then came up with a system. It took me 10 years. It didn't happen overnight, but no, I never really had trouble getting clients.

To speak the truth, it makes so much sense to get to the underlying causes for the condition. And there are lab markers that everyone should be looking at. That's what I wanted to get to.

What are some of the most common lab markers that you see show up for some people that come to you after going to the doctor and trying everything else and trying these treatments when they come to you, what are some things that usually pop up first that you notice?

I actually recognized a pattern. Again, it took me a while, but it starts with the hormones, goes through the immune system, digestion, and detoxification. There are physiological markers for how well things are working. These are not medical diagnosis. I'm not a physician. I don't diagnose or treat anything specifically, but we get these markers on what can be improved. Again, hormone, immune, digestion, detoxification, energy production, the nervous system. There are things you can find out about yourself on plain paper that will teach you something. And, as a practitioner,





they show us why that person feels the way they do. They clinically correlate. So, when someone shows up and they're tired, fatigued, overweight, have a low libido, and foggy thinking, but were told that nothing's wrong with them on their lab work that the physician ran... Well, there are markers that we can get that will tell us what you can work on.

And then the work is pretty simple. You have to do it yourself so, it does take that sense of responsibility, but it's very encouraging. I've had thousands of people say, "No one else runs these tests." And "Oh my God, thank you for showing me what is actually wrong that I can work on. I was starting to think I was crazy" and things like that. It's very rewarding work. I have story after story of almost mir-

acles happening just by running a couple (alternative) labs.

So, after the program, you said sometimes you run some more tests, and this is all to get to the root of the cause in a term that you phrase as 'metabolic chaos'. So, can you describe that metabolic chaos a little bit and how this program tackles that?

I think one of the problems with modern medicine, if you will, is the fractionation that occurs. It's called fractionation - there's a specialist for everything. For a hormone problem, you have to go to the endocrinologist. They may say, "It's a GI problem, and I don't do that. You have to go see the GI guy." And you get



passed around by all these different doctors and they're just going to treat or manage the symptoms anyway. You end up on four, five, or sometimes eight medications by the time you're my age. I'm on none. So, I have FDN broken down into a system so that one person can get enough knowledge about their body. We identify this entire constellation of "healing opportunities." Again, they fall within the hormone, immune, digestion, detoxification, and energy production sectors.

What's also wrong with the current system of modern medicine is that they're dealing with one thing at a time. No one is considering the effect that those things have upon each other. So, the hormones can affect the immune system, can affect digestion, can affect detoxification, and so on. You need to have an understanding of how the dots are connected

and how you can have an effect upon all of it at the same time. That's where our protocols come in. Every person starts off with an intake questionnaire that we (use to) assess if we can help them. The first thing I have to decide is, well, can I help this person? And if it's yes, then are they willing to be helped? Are they going to invest in themselves? The labs and our help aren't free. It's a fee for service business.

So, they have to take that risk and the responsibility and invest in what I think is the greatest investment you could possibly make, your health. Again, as you get older, you start realizing that more and more, right? But even young people, they get it. They want to be fit and they want to perform well at everything they do. So, you have to pay attention. You have to learn. You have to take responsibility. Yes, it's a lot of labs and it's very comprehen-

sive, but it's not complicated. And that's what I've done. I think I like organizing things. I'm able to take complex information and make it simple. And so even though it's comprehensive, it's actually quite simple when you go to do it.

If we accept a person as a client, then we put together a customized program. Everything clinically correlates and (the lab work) explains what's going on with you. So, we design a program and then guess what? Step three, we run the program. I can run the labs. I can tell you exactly what to do, but you have to run the program. And that's where the coaching comes in as well as habit forming and these kinds of things that are going to allow a person to actually change.

What are the types of people that usually you see go through the program, to change their health for the better?

We're international for one thing. I think we're in 50 countries, even though there's only one of us (in some of them) and I'm talking about FDN practitioners. My goal since 2008 has been to train as many people as possible because I want to expand the reach of the clinic where I was very happy working for 10 years and helping a lot of people. Everything I developed was just to help our clinic and our patients be successful. And when I realized how many people I could help if I focused on (teaching) more, it became the new mission - just train others to duplicate what I was doing; to deputize people to go out in the world and do the amazing work that we were doing.

The typical client for me in the clinic is still kind of my favorite. They were women over 40 and they had their own checking account, so to speak. Their kids were grown, or they were empty nesters. That was the group I worked with a lot focusing on bones and hormones





and all the different things that women care about. And I just expanded from there and they brought me their husbands and they brought me their children. And so, it became, again, a comprehensive but not complicated program for everybody. I have story after story.

So, I'll mention one story from the early days. This was early on, and I didn't really know what I was doing. I was just running labs and figuring things out. Thank God for that. This lady came in for chiropractic care and I was managing the place. I would walk her back to

the treatment room and I was trained in physical therapy, so I did body work and then a heat pack, and then she'd get her adjustment from the chiropractor. She came in one day and I could just tell she was sad, and I asked her, "What's wrong?" She said something like, "Oh, it's my weight. I'm 40 pounds overweight and it's just killing me." I said, "Well, what are we going to do about that?" She goes, "Oh, there's nothing I could do. I'm on this medication for the hives."

She was getting the hives all over and had these patches all over her body. (She said) she's on this medication and it's making her gain weight and there's nothing she can do about. So, it (was) just really frustrating to her. And I asked her for a little bit more of the story. She said, "I went to the doctor yesterday and he told me, "Lady, you have your choice. You can be fat, or you can have the hives." And she said, "Well, that's very depressing." And he said, "Well, I can write you a prescription for antidepressants." And what I said to her was, "Well, that sucks, but why didn't you ever try to find out why you get the hives?" And her head snapped around so fast, I thought she wouldn't need her chiropractic adjustment. She said "What?"

I said, "Let's find out why you get the hives."

She'd been on this medication for two years. And we sent her over some lab kits and in just a couple weeks we knew what was wrong. We got her off some foods and some things in her environment and cleaned that up. And within nine days after that visit, she was off her medication. And she told her doctor, "I'm off this medication. Not only that, but I'm going to the gym and working out to a perspiration." (Which she hadn't done in two years. Because of the medication, she couldn't perspire, or she'd get the hives). She hadn't had a hot shower in two years (either) because it gave her the hives. Another 13 days later, I remember, she was losing weight. She lost 10 pounds or something. It was crazy. It just started shedding off because the medication was what was causing it for the most part. Now, maybe being fat is better than having the hives, I don't know, but neither one is acceptable.

That was over 20 years ago, and I didn't realize the impact that I was having on a person, but it just felt so good as a practitioner. You want success stories, you know! And so, I knew I was

on the right track. Oh my God, I could spend the rest of the hour just telling stories of people that did the right lab work, changed their behavior, and then got the results that they'd been desperately searching for.

Shifting gears to talk about some other specific type of client, my first question is, do you guys work with kids? And the second question is how do you change your approach to working with children since the testing might be a little bit shakier for them, so to speak?

Yes. Well, funny you should ask - the next little miracle occurred about 20 years ago involving a child. There was this lady coming in for chiropractic treatment and some nutrition and she was doing really well. She just asked me on the way out the door, "Reed, do you work

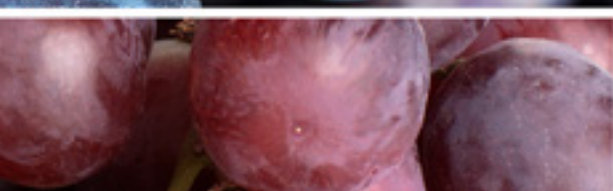


with kids?" Well, I'd raised four and I had a football team. I was a football coach for 15 years. So, I said, "Yeah, I work with kids, but I never really had one as a client. Why are you asking?" She said, "Well, my son, they want to put him on drugs at school. They said he has ADHD." And the drug of the choice back then was Ritalin. And I said to her jokingly, "Well, do you think he has a Ritalin deficiency?"

And she didn't laugh. She said, "No. I don't know what to do. I'm just so frustrated." I said, "Let's do some testing. Let's see if something's upsetting his nervous system or something like that." And we did that. We got him eating the right diet and going to bed on time along with some other lifestyle changes. Within three weeks, the principal of the school tracked me down and asked me, "What did you put Billy on?" He thought it was some pill or something like that that I gave him. I said, "No, it's a little more involved than that. You got to get to the underlying issues with each kid and you can't just put them on stuff." By the way, he was only nine years old and being told he should be on drugs, which to me, is a crime.

So anyway, he turned his life around. And there's story after story just like that. My football players who had asthma, people with migraines and all kinds of things, who changed their lives for the better because of some simple testing and lifestyle changes. So, it's really for all ages. And look, my mom is 91 years old, and she started working with me about eight years ago. She waited until she was in her eighties, but she cleaned up some kidney issues, got over a lot of joint pain, and cholesterol issues. She's 91 and still drives. She sings in the choir. She writes and is on her sixth poetry book. She even goes around to other senior centers giving talks.





What are you guys doing in your program to keep up with the fast-paced world that we're in now? Everyone wants results quick, quick, quick. And we know that we can't get our results that quick for a lot of things that matter, but what are you guys doing in terms of your program or modifications to keep up with the growing trend?

Yeah, that opens up a huge area for us. I have about 30 employees and we're all over the world as well and we try to stay up on things. The truth is, I've read this, and I totally believe it: If you read all the new scientific literature, eight hours a day for a year, at the end of the year, you'd be 50 years behind in your reading.

So, the amount of stuff coming out is impossible to keep up with. So yeah, we do observe the same trends that everyone else does and we try to sort out what's for real and what's helpful. Sometimes it's about the new labs that have come out and wondering if we can use this marker or that marker. Some of it is more product based, new miracle supplements, things like that. So, my team and I have to have very strong 'Bullshit Meters', pardon me, but that's what we call it. If it sounds too good to be true, or it sounds funny, sounds like they're just trying to make a buck we aren't interested.

There's a lot of people out there just trying to make a buck and they will tell you anything. Actually, I just wrote a letter this morning to a company that wrote me saying I could make more money if I would do their thing. And I said, "If that's all that motivated me, I would lose the respect and the trust of my tribe." And I turned down the offer and said, "Thanks very much." I copied my staff on that. We just really do our best. We vet things in our committee for those that sound interesting. Of course, the biggest veterans of all are my tribe. So, it's not just me making those

decisions. I have a committee that things also have to get past. They're smart people. They know what's going to work for their clients and what's not. So, we feel safer on that structure.

So going back to your whole program here, you have the clients that go through the program as clients just trying to improve their own health, and their individual wellbeing. And then you have this other side of your business, that's the actual course where you train people to become health practitioners, so to speak where they can go out and help these people. So what are some principles you can you tell me about the course that readers that haven't heard about it before could maybe learn something from?

Well, the prerequisites are that you must have a really strong desire to help other people. And the second one is that you're willing to "walk the talk." Other than that, why would I restrict

anyone from taking a course that teaches you how to help people be healthy, starting with yourself? So, we call it the walk-the-talk program. As a matter of fact, everyone that takes my course has a strong interest in health - helping others and their own health. And so, they go through it. Every student has to run the labs. It's part of your tuition so you're going to do it on yourself. The first 2000 graduates - I personally interviewed (them) at the end of the program when they had not only finished the course but also passed their certification exams.

I just asked them, "What could I do to make the course better?" I also asked what got them interested in the first place. Almost all of them had some health issue of their own whether it was fibromyalgia, chronic fatigue, or some kind of long-term chronic degenerative disease.

If you have the Ebola virus, you're not going



to call your health coach. We definitely know where we are in the health space. But if you lived yourself into it (your issue), you can live yourself out of it. You just need to know what to work on and you need to have something trackable that's measurable. So that's what I teach in the course. It's "What labs to run and how to design a customized protocol based on those test results." You can't just interpret a piece of paper. The numbers mean very little if they're not attached to a person, their condition, what they're going through, and what they're able to do as a protocol and things like that. So, it's highly individualized and it's a fun thing to do.

You can make good money doing it. I wouldn't say any of us are really getting rich, but we're making good livings while helping other people and that's a very rewarding and satisfying thing. So that's my main focus in the course now. My focus is to produce more practitioners

to go out there and change the world and the way that health is managed. The same thing that was going on 22 years ago when I started (with) "the cycle of the trial and error," people are still caught in it. They're still getting caught up in reductionism, (dividing) their bodies into little individual parts, and working on that specific part before going to a different doctor to work on another. And you really need to be working on it all at the same time. Right?

Hey, there's nothing wrong with (treating) symptoms. Relief care is important. You can't tell a suffering person, "We're going to get your diet right and get you sleeping right. We're going to do all this lifestyle stuff..." - because they're suffering, and they'll go down the street for something else. They'll go get some pills somewhere. So, you've got to be able to provide some immediate relief care, that's important, but it should be intelligent relief care. It shouldn't be something that's dangerous or



has a lot of side effects like a lot of medications do these days, right? So, we try to use care that's as natural as possible. While doing that, in the background you're still going to be doing the grounding program which is called our DRESS for Health Success® program. This is where you'll begin feeling better inside and experiencing the long-term, longevity, anti-aging, and all the wonderful benefits of that program.

Can you elaborate a little bit on the dress for success program and the acronym, what D.R.E.S.S. Stands for?

Yeah, I came up with that after years of systematizing things. So, it becomes easy to teach people, right? The first acronym was H. I. D. D. E. N. which stands for hormone, immune, digestion, detoxification, energy production, the nervous system. That's where things are going wrong. And, by the way, those things are all crashing into each other. That's why I call it Metabolic Chaos®. You got problems in six areas but then, what's the solution? Pick out one thing? Or, is it better to self-treat everything at the same time with diet, rest, exercise, stress management, and supplementation. And that spells D.R.E.S.S. Anything that isn't diet, rest, or exercise or supplementation goes under stress reduction whether it be a mental stress, emotional stress, or spiritual angst from having no purpose in life, etc.



Then there's trauma. If I had to pick one thing, I've been hard on my body, it's very well used. I've got injuries: shoulders, knees, neck, and stuff from surfing and from skiing and from wrestling. I did Jiu-jitsu until I was well into my sixties. I still do things I probably shouldn't be doing like riding a motorcycle. I still ride every weekend. So, I have some pain, and if I don't take care of it and get it fixed, it sneaks up on me. You have to really pay attention. So, there's all that mental and emotional stress, and then there's the trauma and aches and pains from injuries and things like that. Then, probably the biggie, is where we do a lot of the lab work - the chemical and biochemical stressors- those apply to stress as well.

So talking specifically about the supplements, how do you guys discern which supplements are going to be recommended to your clients? Are there certain standards in terms of the ingredients and companies that the supplements must entail?

Yeah, that's a great question. Generally speaking, we live by the four S's of supplementation. First there's substituting for what's missing from food. Food just doesn't have the same amount of vitamins, minerals, phytonutrients, essential fatty acids, antioxidants, and things that it used to have. It's all grown now on these big industrial farms, and you get it, and it might not have that much nutrition in it. So, you've got to substitute for what's missing. The human body requires certain levels of things, and its genetically dictated. Then there's also stimulation. Let's say you're getting on a plane, and you want to stimulate your immune system. Well, supplements can do that. You definitely want to stimulate certain things. You want to support certain systems too. That's the third S, support. Support your adrenals, because you're under a lot of stress and your digestion because it may not be working (properly). And then there's the final S, self-treatment. If you have parasites, bacteria, and fungus you might need medication, but there's also tried and true natural products that can chase those things away. And so, you could self-treat it. So, supplements are very important.

The other thing I'll say about them is that they're tricky. I was very lucky that when I went to work in that wellness center in 1999, the owner was a chiropractor who was going to get her diplomat in nutrition. She was going to go to these weekend courses for almost a whole year and she said that I could go with her so that I could get my certificate in nutrition if I would just do her homework for her. I'm half



joking about that. But the other thing was, she said that I could also work with our patients in between classes. So, I got this amazing experience very early on, working with nutrition and supplementation and things. I became a nutritional therapist. That was one of my first steps in this amazing journey. I learned a lot about supplements from these classes and determined which were the really high quality, clinically significant, well-established, pure, natural types of supplements.

But you can't just carry yourself with supplements or even treat yourself very well. You can get over a hump here and there, but it really takes a whole lifestyle change. So, my journey started there, and I think I know a few things about supplements. Since I learned from that company early on, I maintained some of that same natural philosophy. There's so much crap that could go on and does go on in the supplement industry. It's too bad. I think they're better than drugs, unless drugs are absolutely needed. And we prefer drug-free solutions. As a matter of fact, I've been a member of the American Association of Drugless Practitioners for many years and our course is fully

endorsed by them and fully accredited by the AADP. Anyone that takes my course is also eligible for their Holistic Health Practitioner designation. So, I've stayed really connected to these areas of the health space.

Safety is very important. Look at what is coming into this country, flooding over the border - dangerous drugs. And they're being abused. I don't know too many cases or haven't seen too much where supplements are being abused. Supplements are supposedly natural products that we're actually missing. We're deficient in some of these things.

The reason that the medical practice is licensed is because it's dangerous. You need a license to drive a car because driving a car is dangerous. You need a license to practice medicine because prescribing drugs and surgery is dangerous. It can kill people, and it does - some estimates are almost half a million people a year die from medical mistakes. Now, if nutritionists were killing that number of people, it'd be outlawed, right? It wouldn't exist. For nutritionists, it's a small, teeny, tiny fraction of that number. It just doesn't happen in our business.



What type of effects have you seen on your company from the pandemic? How has that affected your business?

For those of us at FDN, the practice (method) that I teach is that we're each an independent health entrepreneur. So, most of us already worked from home when everyone else was getting sent home. I'm in my home right now. I have a really nice home in Southern California, and I love working from the house. I must say it does require a different type of work ethic, but FDNs have been used to working from home. So now there's a new group of people at home and; what are they concerned about during the pandemic? Their health. So, we've done really well. I don't want to seem like I'm capitalizing on what's otherwise devastating to a lot of people but, the pandemic has helped bring awareness and consciousness to lowering your risk while promoting the message that natural immunity is a really good thing.

How do you keep yourself centered? How do you keep yourself balanced throughout some kind of daily routine that you do to make sure you're focused and on top of things while doing so many other things?

My dad told me long, long time ago, "Early to bed, early to rise, work like hell and advertise." I'm not even joking, but I do go to bed real early, like 8:30 or 9:00, my lights are out. And then I get up real early. I can get an eight-hour workday in by the time most people are just eating lunch. Then I can spend the rest of



my life doing things I really love doing. I love gardening. I have a lot of property. I've done a lot of landscaping and things. I've planted over 2000 succulent plants. Again, I live maybe 30 miles from the Mexican border so, I'm in a great growing area. I love my motorcycles. I have four of them in the garage and they're all running perfectly. I can take them out any day with my wife who is only 42 years old.

We have a really amazing youthful lifestyle. Let me just put it this way; if I was to keep that going, I would get up early every day and work pretty hard. I would also have grown and attracted people around me that have the same mission. So, having people with the same mission and purpose in life around you, I would

say is another thing that keeps me going. Everyone has a bad day here and there (but) my staff is amazing! They're so dedicated to what we're trying to accomplish together. I'm uplifted by that. I do meditate. I do a lot of breathing (exercises) . I have a sauna in my office. I have a pool and jacuzzi. Again, I have a lot of land and fun stuff to do, but I get my work done early so that I can still play. I like to play hard. I still play hard.

What is the thing you'd like to leave all our listeners and readers with, and how can they find out more about your company and get involved?

I just want everybody to be happy. My goal is to just be happy and experience joy as much as I can. And we share the love. We've grown a community of really dedicated practitioners who love to learn. They love to help others and

they try to walk-the-talk. They're not a bunch of phony people who look good, but actually aren't healthy on the inside. I noticed that from day one, they were really healthy. So, I get up every day with that. Sometimes I don't automatically feel that way, but I'm in the habit of saying to myself that it's going to be a good day. "Go get some work done and do some good in the world and everything will work out." I tell myself that constantly throughout the day. "This too shall pass, my son." is what my dad said to me.

My final words would be to be grateful. Just get in a state of gratitude. Things can definitely always be worse, even though sometimes it might not seem like it. But be thankful. Call someone up to tell them you love them. You'll make their day and you actually make your own day too!

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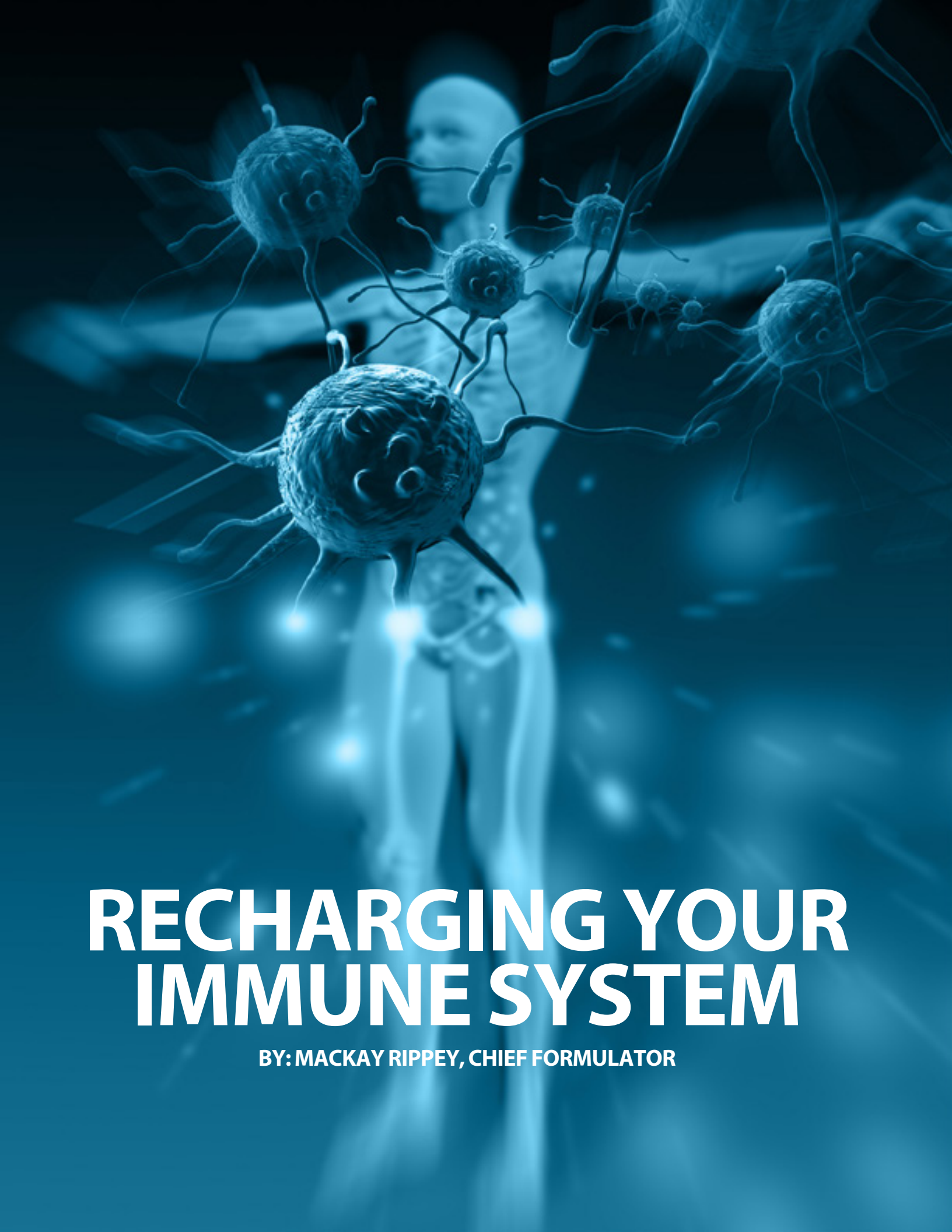
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RECHARGING YOUR IMMUNE SYSTEM

BY: MACKAY RIPPEY, CHIEF FORMULATOR

Your Immune System: The Most Powerful Force In Your Body.

We all learned one thing in the past two plus years, if your immune system is not fully charged, it can kill you.

Whether you got the jab, got COVID, got some other infection, or were just stressed as public health became a political football kicked around for power, money, and control, your immune system has taken a hit, and it's time to recharge it.

A young woman called me for an appointment recently with shingles-like pain. She is a nursing student and was required to get the full schedule of COVID vaccinations.

We could argue all day long about that decision forced on her, but that's not the point of this article. The point of this article is to learn from her pain so you can hack your immune system and live a better, longer life, with fewer interruptions from injury and illness.

See, if all you focus on is the evils of mRNA vaccines and the industrial medical complex, there is not a lot you can learn except, "Don't take the jab." Which is kind of like, "Don't walk barefoot in San Francisco." Good advice, but of limited use if you don't live in San Francisco. A deeper lesson to learn from this poor nursing student is the non-negotiable care and feeding of your immune system.

Your immune system is the most powerful force in your body. Uncontrolled, it can kill you in a few hours. In fact, there is still not a lot of intensive care physicians can do once the immune system goes into overdrive and the patient goes into septic shock. That's why we saw so many horrible deaths during COVID. That's why the virus disproportionately affected the old and sick. And to a lesser degree, that's why we are seeing long-COVID symptoms in those who got the virus and/or the jab like the nursing student.



Allow me to draw an analogy to make an important point. Your immune system is like the smokejumpers who parachute into wildfires to control them to save lives and property. One of the tactics these brave men and women use is to start new fires called back fires. Back fires are a controlled burn that starve the main fire from fuel. When our immune system jumps into action, many if not most of the initial symptoms we experience are caused by our immune response and not the actual pathogen. Don't get me wrong, prolonged infections can also kill you. You only need to look at an immune-compromised person to see the devastating effect of an incompetent immune system.

The infamous "cytokine storm" is the immune system's "smokejumpers", completely out of control. Instead of setting precise controlled backfires, they are dropping napalm indiscriminately causing more harm than good. Cytokines are immune system communication molecules and coordinate the immune response from initial infection to resolution and healing. The "cytokine storm" is caused when the immune coordinating cell like Mast Cells, Macrophages, and Th cells essentially "panic" and send the message for the im-



mune “smokejumper” cells like neutrophils to “burn” everything.

What I’ve been describing is a worst-case scenario. The dramatic language is important because to a lesser extent, this is what happens every time we are sick, injured, or stressed. The more hits we take without fully recharging, the more vulnerable we are to small-scale “cytokine storms.” In fact, that’s what happened to the nursing student. Prompted by the vaccine, her immune system overreacted and eventually damaged the myelin sheath surrounding nerves in her back. Ouch! I will find out during her intake, but I’ll bet dollars to donuts that the vaccine was just the proverbial cow that kicked over the latter and set her nerve on fire. Most like-

ly her immune system had been run down by the stresses of school and maybe another illness, and she had not hacked a recharge.

“What doesn’t kill you, makes you stronger,” is a good mindset meme, but physically, too many hits too close together may not kill you, but it can run you down. That’s exactly what you see when your rebound REM sleep increases at the expense of Deep Sleep. It also shows up in HRV, resting heart rate, and temperature trends.

In the short-term athletes will notice reduced performance from overtraining and eventually burnout. This happened to another patient of mine who was a Level 1 Cycling Coach and a trained Olympic competitor. This coach knew the importance of recovery and recharging her immune system to avoid overtraining. But all that knowledge was put aside when she flew cross country to see her new granddaughter, stayed up nights helping her daughter, and continued to train. She crashed. Not literally but she did experience burn out and got sick and was unable to train hard for six weeks. Are you starting to see

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why hacking your recovery and recharging your immune system is so important?

The exact thing happens in slow motion with “modern” diseases like obesity, insulin resistance, hypertension, heart disease, IBS, food sensitivity, and even anxiety, depression, and Alzheimer’s.

If we go back to the smokejumper analogy. Instead of a massive response, the immune system is setting lots of little fires throughout the body. The damage from one of these immune “fires” is insignificant, but when millions of these immune responses accumulate over the years, diagnosable illnesses manifest. If you’ve heard the medical midrash, “All disease is inflammation,” now you know that they are talking about a run-down immune system that cannot resolve the inflammation it starts. Unresolved and/or uncontrolled inflammation is the source of poor performance, burnout, mental distress, illness, and aging.

Biohack Your Immune System

Biohacking in its most elemental form, is finding highly leveraged actions that quickly and completely recharge the immune system so you can live a longer life performing better at whatever you love to do. That’s why you read this magazine and that’s why you are reading this article, so let’s get to it! To hack your immune system, you need to understand some basic biochemistry. If you don’t understand the systems you are hacking, you can do more harm than good. We’ll get into the pitfalls later in this article. In the meantime, don’t worry, we’ll stay in overview mode and only drill down when necessary.

The first pathway to hack in the immune system is the Nitric Oxide pathway. In 1998, Robert F. Furchgott, Louis J. Ignarro, and Ferid Murad, were jointly awarded the Nobel Prize in Medicine for their work identifying Nitric Oxide. What they did not understand is that this simple gas consisting of only two atoms, one oxygen and one nitrogen, is central to

the controlled function of the immune system. There are tens of thousands of scientific papers exploring the role of Nitric Oxide so just know what we will cover here is the cocktail napkin version.

Nitric Oxide has two basic functions. It functions as an effector molecule and as a signaling molecule. For example, Nitric Oxide can affect direct action like inhibition of the SARS-COV-2 virus from attaching to the ACE 2 receptor and entering a cell. But it can also function like a Cytokine and signal other immune cells to change their behavior. Without sufficient Nitric Oxide your immune system simply will not function.

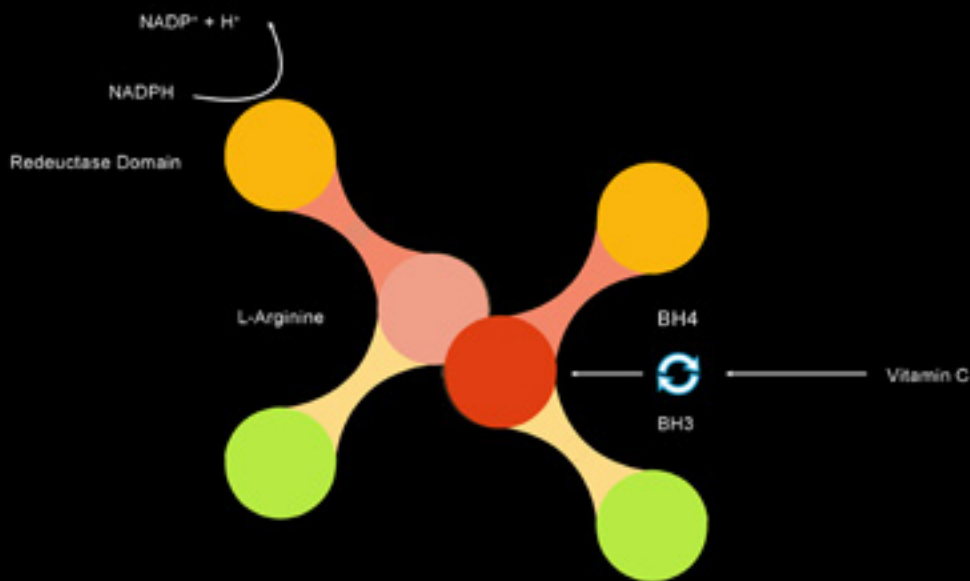
The enzymes that produce Nitric Oxide have two weak points, after prolonged or intensive activation, protein deficiency, and/or oxidative stress can stop working. Those two weak points are a local pool of amino acid, arginine, and a cofactor called BH4.

Arginine is a conditionally essential amino acid which means that under normal circumstances, the body can make most of what it needs. But we are not talking about normal stress-free times, we are talking about a stressed and spent immune system. So, an immune system that is activated acutely or chronically will need a steady supply of arginine.

The problem with arginine is that if you take it as a supplement, most of it will be taken up by the liver and very little will make its way to the nitric oxide enzymes that are starving for it. The solution is to supplement with citrulline instead. Citrulline bypasses the liver and enters the cells where it is converted into arginine to make Nitric Oxide.

The other weakness is BH4. This molecule ensures the smooth functioning of the Nitric Oxide by standing by and donating an electron when needed. This is a bit technical, but all you need to know is that after the BH4 donates an electron, it must pick up another electron. When this

Vitamin C Supports Nitric Oxide Production



Simplified Nitric Oxide Enzyme Model

transfer fails, the BH4 becomes oxidized causing what's known as Nitric Oxide Uncoupling.

Vitamin C is the preferred antioxidant for BH4. Vitamin C donates an electron to BH4. Now you understand one of the ways Vitamin C supports immune function and why this nutrient is so important. That was the heavy lifting regarding biochemistry. The rest is much simpler, although just as important.

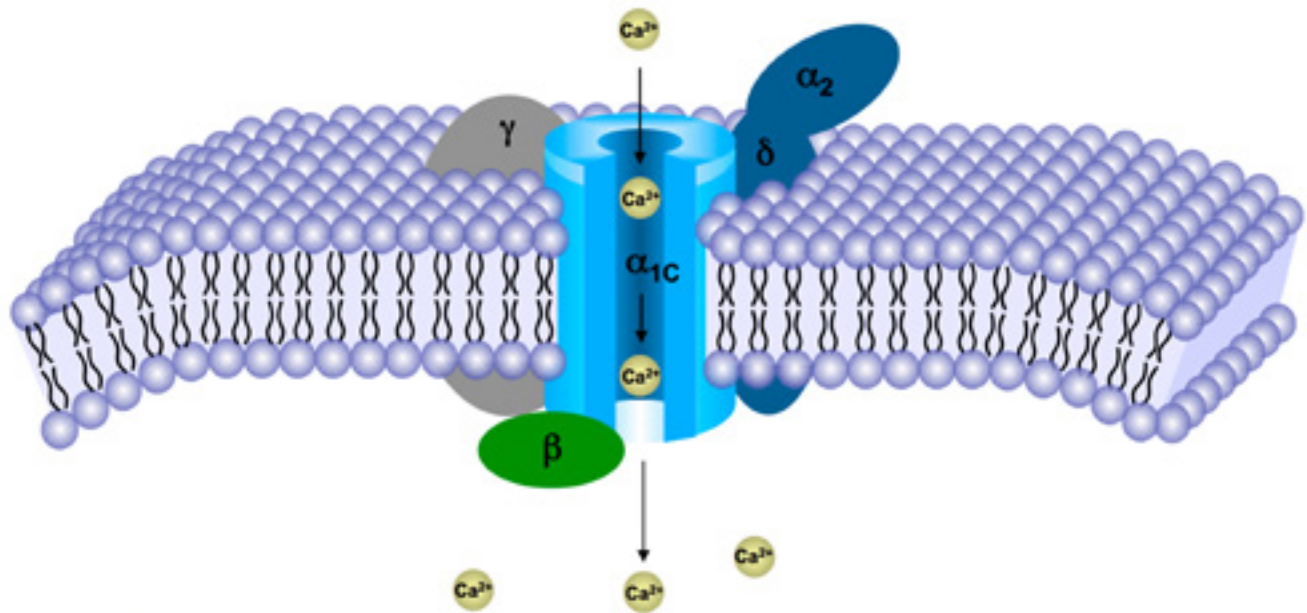
The next pathway we are going to explore is calcium and the calcium channels which chaperones calcium into cells. One of the functions of calcium and the calcium channels located in cell walls is to "excite" the cell into action. This action causes biological activity as diverse as your heart beating, decoding the light emitting from the screen you are reading, and even the thoughts you are having right now.

Calcium is a critical nutrient, but too much calcium can cause too much cellular activity. For example, that's why physicians prescribe calcium channel blocks to lower blood pres-

sure. But there are natural ways to hack the calcium influx to the cells.

Magnesium is nature's way of regulating calcium channels and why it's so critical for attenuating cell function throughout the body. Magnesium in the extracellular matrix can attach to a calcium channel and prevent calcium from entering the channel and exciting the cell. This includes immune cells like macrophages, killer T cells, and neutrophils. Bad things happen when those cells become over excited by too much calcium. Some researchers believe that EMF's, particularly, from the new 5G towers, cause disease by forcing more calcium into immune cells triggering inflammation.

Illness, stress, and inflammation deplete the body's stores of magnesium. And because of soil erosion and mineral depletion, almost everyone on the planet is deficient in Magnesium. Unfortunately, unlike calcium, recovering from a Magnesium deficiency is not as simple as eating grass-fed butter. Despite what some food experts claim, Magnesium is not particularly con-



Physiological Effects of Ca²⁺ from Ca_v1.2

- Excitation–secretion coupling
- Excitation–contraction coupling in cardiac and smooth muscles
- Regulation of ion channel function
- Activation of Ca²⁺–dependent enzymes

centrated in any food, so supplementation is the best way to insure healthy magnesium levels.

I'd also like to make a quick comment on Vitamin K2. This critical nutrient helps the body manage calcium by removing it from circulation and depositing it in bones and teeth. It's another way that the body manages healthy levels of circulating Calcium. So, K2 is not simply a "bone" supplement, it's an important part of immune regulation.

Can You Overdose on Supplements?

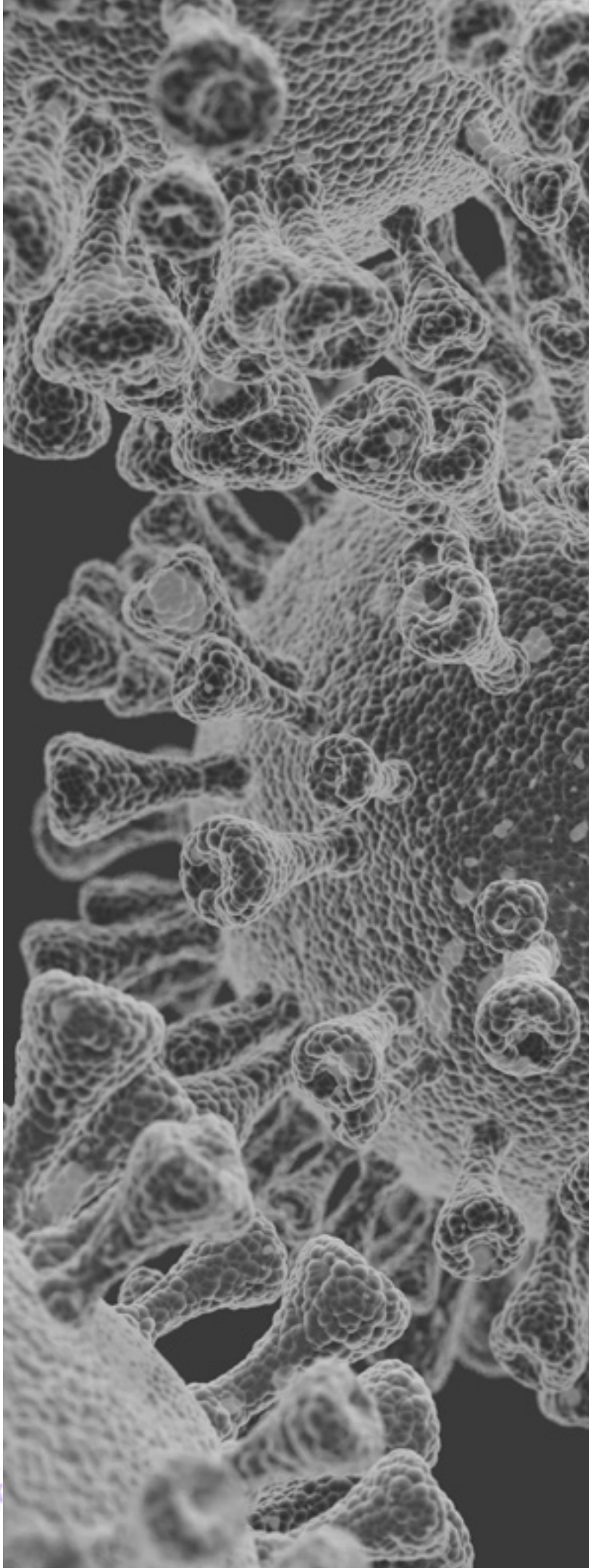
Do you remember when we first realized that COVID might be more than just another seasonal flu? There was a run on Zinc. My office was calling all our distributors trying to find a source. What got lost in the shuffle was the fact that too much zinc is toxic.

Now, it's not toxic enough to kill you, but too much zinc can have the opposite of the intended effect. It can suppress immune cells called lymphocytes. Excess Zinc can also deplete Copper. Low copper results in decreased cell-mediated or specific T-cell response, as well as nonspecific innate immune function. And that's just the tip of the copper immune function iceberg.

Another area of controversy and potential toxicity is Vitamin D. At this point you know the important role Vitamin D plays in your overall health and immune function, so I won't rehash it here.

However, the "sunshine" vitamin also shows an inverted "U" curve where too little is bad for your health, too much is also bad for you, and in the middle is the sweet spot. One weakness of these vitamin D studies is that they rarely take into account Vitamin A levels. There is compelling evidence that some of Vitamin D's toxicity is actually due to a Vitamin A deficiency.

Because the liver does a poor job of converting plant-based Beta Carotene into bioactive retinol, many people who think they are getting enough Vitamin A via their supplements may be deficient. Especially if consuming



large doses of Vitamin D. This might be the source of the Vitamin D “toxicity” that some researchers are finding.

However Vitamin A’s benefits do not stop at being a sidekick to Vitamin D. It plays a starring role in maintaining healthy barrier function in the sinuses, lungs, and intestines protecting those organs from infections. And if that’s not enough, Vitamin A also has a direct effect supporting the healthy function of immune cells.

Bio-stacking Your Supplements?

So far, we’ve only dipped our toes into the deep waters of supporting immune function with nutrition and we’ve already looked into nine individual nutrients. If we kept going, soon we’d have to clean out Walgreens just to keep up. The other issue with trying to stack individual supplements is that problem I highlighted with taking too much Zinc or Vitamin D without taking the corresponding supporting nutrient.

The best way to avoid unbalanced stacking is by taking well-formulated blended supplements. But once you start stacking blended supplements you run into the toxicity issue all over again, but for a different reason.

Whenever I see a new patient, I have them pack up all the supplements they’ve taken in the past three months and bring them in. Usually, their collection fills a shopping bag. I do a label review. I often find that they are overdosing on many vitamins, simply because they are included in almost all of their blended supplements. B Vitamins are often a big culprit. Supplement manufacturers often include B Vitamins because they are relatively cheap. Because each of the individual supplements are formulated in isolation, their supplement stack ends up doing as much harm as good. It’s frustrating as a practitioner to help patients create a good supplement stack without having to recommend dozens of individual ingredients.





This is why I jumped at the chance to become part of Vatellia Life, with the expressed purpose of formulating a line of supplements that are intentionally designed to work together without causing ingredient toxicity or imbalances.

My passion and focus at Vatellia Life is to build a brand of supplements that are designed from the ground up to be stacked without having to worry about ingredient toxicity.

We have formulated a supplement stack especially for you to recharge your immune system. This Immune Recharge Stack is comprised of:

- **Immune Up** - Foundation blend of immune supporting Zinc, Vitamin D, Vitamin A, and Vitamin C which supports a balanced immune response.

- **Kale Buster** - Organic beef liver plus Vitamin K2. Beef liver is the original primal superfood. Kale Buster has bioavailable copper, Vitamin A (retinol) and added K2 and pairs with Immune Up to balance Zinc and Vitamin D naturally.

- **Nitric Boost** - Citrulline based Nitric Oxide support replenishes the raw materials your body needs to produce sufficient Nitric Oxide for a healthy immune response. The additional Vitamin C in Immune Up also helps restore immune cell redox balance for proper functioning of BH4 support of the Nitric Oxide producing enzymes.

- **Mag Support** - Is formulated with a time-released capsule to maximize absorption and minimize gastric distress (loose bowels). It also is formulated with a highly absorbable chelated form of magnesium, Dimagnesium malate. That means more of the magnesium ends up in your system where it can modulate immune function.

Additional Support:

- **Daily Zen** - If you are in a high-stress job or situation which is chronically activating your immune system, you will want to consider adding Daily Zen to your stack. We created this formula to calm stress hormones and promote feel good neurotransmitters.

- **Eaters Digest** - Experts agree that 70-80% of our immune system is located in and around our gut. If you have digestive issues, they may be creating long-term immune activation depleting your reserves and slowing your ability to recharge your immune system after stress or illness. You may want to consider adding Eaters Digest to your stack.

In a perfect world, we all would have a personal chef who cooked organic meals grown in our regenerated garden. We would have unlimited resources and time to get frequent lab tests done to precisely monitor our bio-markers, spend time in our hyperbaric

chamber, do hot yoga bathed in infra-red light. We would go to bed on time with all our blue light LED's automatically shifted toward orange/yellow and we would wake up to greet the dawn with a cup of mold-free coffee.

But most of us live in the real world, so we hack. One of the most cost-effective ways to hack our bodies is with supplements. While some people complain about the cost, it's a fraction of the expense of attempting to engineer the perfect environment. Bio-stacking with supplements that are designed to work with each other, and not against each other causing imbalances and toxicity, the investment in your health compounds.

Designed to work together, Vatellia Life has created specific stacks of supplements which were formulated to work together for maximum performance. Taken together, Vatellia Life supplements are guaranteed to position you for performance driven living.

ABOUT THE AUTHOR:



Mackay Rippey, Chief Formulator at Vatellia Life has a love for nutrigenomic research. He is on the Zona Health Advisory Board and can often be found presenting at their conferences or on a webinar in partnership with Vatellia Life. Mackay is the Co-founder of Beyond Protocols, an education platform for Functional Medicine practitioners dedicated to transforming medicine away from canned protocols and toward unique patient roadmaps that we call Medicine 2.0. He is a member of the Research Team of the Nutrigenetic Research Institute and regularly presents at their conferences. Mackay formulates consumer and professional supplements for Vatellia Life and Nutrigenetic Research Institute. Holding a master's degree in Acupuncture and has enjoyed practicing for more than 30 years.

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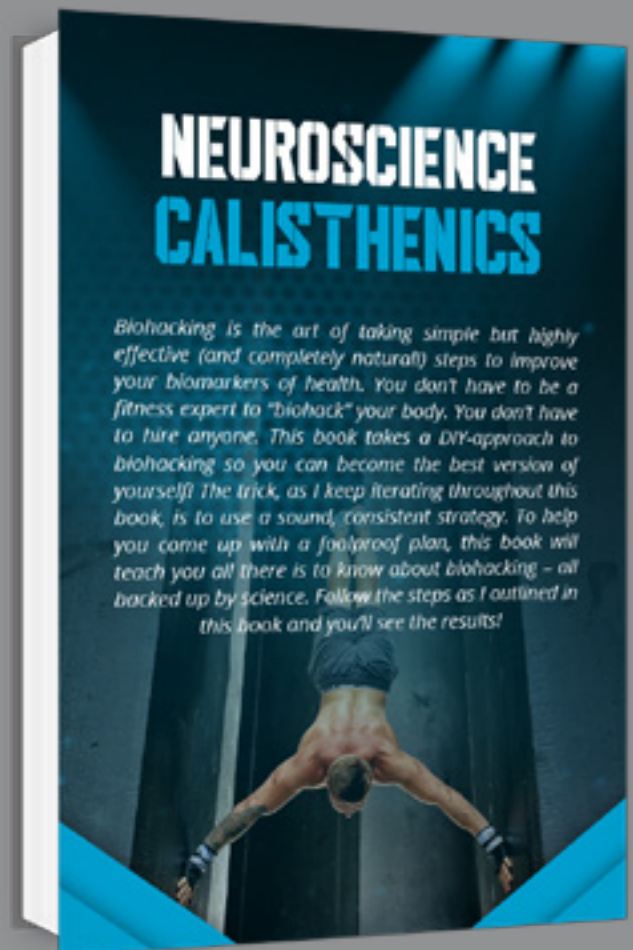


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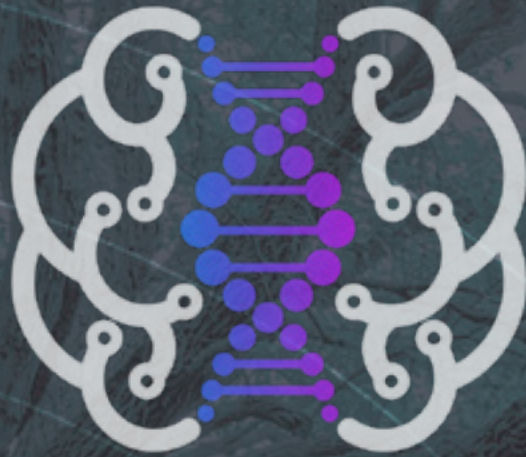
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