

BIOHACKERS

MAGAZINE

EXCLUSIVE INTERVIEW

With Revered Biohacker,

**BEN
GREENFIELD**

*The Path to
Gratitude, Focus
& Balance*

Physiologist, Fitness Coach,
Podcast Host, Best Selling
Author & Extreme Athlete

Also In Our February Special Edition:

- EARLY VS LATE NIGHT EATING: CONTRADICTIONS, CONFUSIONS, AND CLARITY
- BIOHACKING YOUR BRAIN ON A BUDGET
- BIOHACKING YOUR DREAMS
- AND MUCH MORE!

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Issue 12

DAVE ASPREY'S #1 BIOHACK FOR HAIR:

AMERICA'S
#1 HAIR BIOHACKER,
ALAN J. BAUMAN, MD



CAN YOU BIOHACK BALDNESS?

Absolutely, according to Dave Asprey, the "Father of Biohacking" and founder of Bulletproof.

When Asprey decided to biohack his own thinning hair, he turned to the best hair restoration surgeon on the planet, Alan J Bauman, MD. Like Asprey, Dr. Bauman believes in do-it-yourself biology through biohacking and the benefits of bulletproofing your hair.

Dr. Bauman is keenly interested in the latest biohacking techniques to live a longer, healthier life and look your best. If you are, too, it's time to schedule a consult, either in-person at our 12,000 square-foot "Hair Hospital" in Boca Raton, FL or virtually – from the comfort of your home or office.



In case you're wondering, Dave chose an FUE (follicular unit extraction) hair transplant procedure and used the Bauman Turbo LaserCap® as part of his treatment regimen. His results, shown here, speak for themselves.

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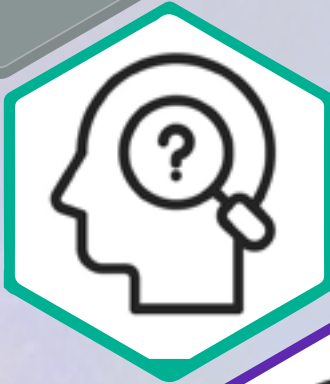
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Our Categories

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 background is a sunset with a sun low on the horizon. A network of white dots and lines is overlaid on the scene, suggesting a digital or neural network. The text "MESSAGES FROM OUR BIOHACKING TEAM" is written in large, white, bold, sans-serif capital letters across the lower half of the image.

MESSAGES FROM OUR BIOHACKING TEAM

A LETTER FROM THE EDITOR

First impressions seem to always get the better of us. Quick judgements about others, ourselves, and our communities never seem to cease making their presence known in our minds. Psychologically, these initial assumptions and impressions that our mind receives are tactics our mind uses as a means of survival, sometimes aligning with our intuition to help us determine what or who is going to be helpful or harmful. But we must be careful here. Our mind is equipped to handle countless sensations and thoughts, and due to this, we sometimes get so bogged down by this demanding, busy world that we take the easy way out and make a judgement based solely on superficial knowledge, without any deeper reflection or analysis. The world is fast paced, and although our mind does well to keep up, it needs to be able to consciously recognize that our health, both individual and as human beings, is dependent on the strive to understand

oneself and the other with empathy and compassion. COVID-19 has shed a new spotlight on the increasing mental health crisis that is facing our world, and I believe that one of the main causes is careless thinking that leads to quick assumptions, to save oneself the time of research and contemplation. Don't let others think for you. Yes, respect those with the authority to offer professional opinions, but don't be a follower, be a student and learn from every experience. When your health seems to suffer, don't assume the worst. When someone comes at you the wrong way, don't write them off as a heartless soul. When you have a tough interaction with someone representing another community, don't assume that everyone else is like that. Instead, look for the best in yourself, others and the community. There is power behind the phrase "Love thy neighbor". When we treat every person that we come across as our neighbor, we break down the prideful barriers that

lead to alienation and instead open the gates to continued togetherness and participation in a loving community. I think too often we, as biohackers focus more on the physical side of things, which is of course important, but does not truly define what it means to be human. The human person is a compositum of both mind and body. Spiritual and Corporeal substance. When biohacking ourselves, let's remember to start with the intention of acting out of love for thyself, of thy neighbor, and of thy community. There will always be disagreements between people, but when we see the other person as our neighbor, as another one of us, so to speak, we offer respect and extinguish any hatred and sinful intentions from the relationship, thus creating a peaceful, happier and more vibrant environment to foster a healthy mind that's prepared for whatever the onerous world throws at it.

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



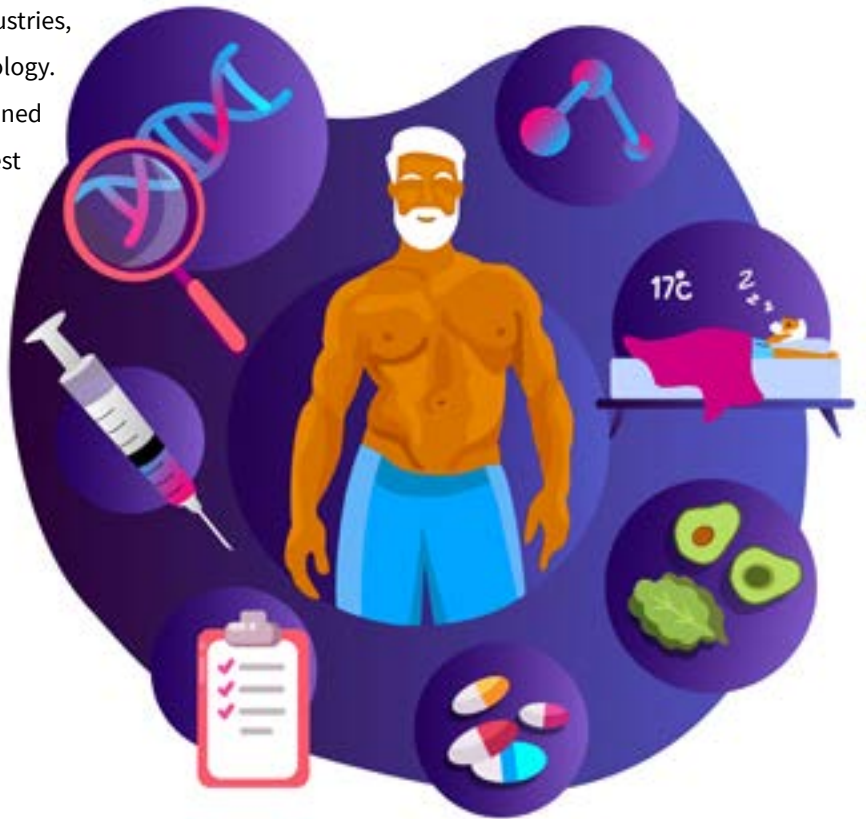
A MESSAGE FROM COO JEAN FALLACARA

The evolution of technology has impacted nearly every life aspect. From education to manufacturing industries, people everywhere benefit from innovative technology. However, the biggest transformations have happened in healthcare, where technology and the latest methods are used to detect diseases, treat patients, and find solutions to new diseases. The question now is will Biohacking transform healthcare forever?

Biohackers using innovative methods started creating waves in the last decade. According to *biohacking experts*, like Ben, they aim to transform healthcare forever.

The World is Mind!

--[Jean Fallacara](#)



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 Montreal, Quebec with his family where he uses his 20+ years of experience as a business executive.

Website: cyborggainz.com

ARJUN'S STATEMENT

Another year passed, another extraordinary year, an year that has disrupted the regular rhythm of life. Sometimes it feels so unfair, in those times i am reminded of a phrase I learned as a kid,

"कर्मण्येवाधिकारस्ते मा फलेषु कदाचन।
मा कर्मफलहेतुर्भूर्मा ते सङ्गोऽस्वकर्मणि॥"

It is sanskrit for, You only have a right to action and not to the fruits of your action. Do not become a person who constantly meditates upon the results of one's actions.

We only have control over our actions and not on the outcome of those actions, so worrying or stressing over what is beyond your control is fruitless. Accept the situation, do your best and hope for the best. Remember whatever is going to happen will happen regardless of your participation and this too shall pass.



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



BIOHACKERS
UPDATE MAGAZINE



EVERYTHING YOU NEED TO KNOW ABOUT BIOHACKING

Many people find it hard to believe that a method exists that allows you to control your mind and body. This amazing yet simple hack is called biohacking.

If you're a beginner at neuroscience or biohacking, here's everything you need to know about this method that will help you live your best life!

What is Biohacking?

In simple words, biohacking is a growing social movement in which

people study biology, life science and follow certain strategies to improve their life's quality. However, unlike other traditional medical methods, biohacking varies from person to person. For some biohackers, following biohacking means making little lifestyle changes, while other biohackers change their daily life habits completely.

From losing weight to being more productive at your job, biohacking

shows many promising results. However, you need to research it well beforehand to get effective results.

Types of Biohacking

There are different types of biohacking. But, the most common types of biohacking are discussed below.

1- Nutrigenomics

Nutrigenomics is the easiest

to follow and most low-effort biohacking type. In nutrigenomics, people notice the effect of the food they consume on their mental and physical health. Based on the food's reaction, people try to eat foods that positively impact their genes.

However, nutrigenomics has its fair share of controversies, where many people believe that using nutrition to change your body's genetics is unnatural and unethical. However, the impact of nutrition on your body's health and genetic expression is backed by science. Moreover, nutrigenomics also focuses on how



your food intake affects your feelings, thoughts, and behaviors.

2- Grinder

Grinder is apparently the most advanced type of biohacking to date. In grinder, people see every human body part as hackable. The purpose of biohacking experts is to turn their bodies into some sort of cyborgs that they can have full control over. This biohacking type allows biohackers to use injections, gadgets, implants, or any other insertion on their body to optimize their bodies.

Role of Regular Blood Testing in Biohacking

No matter which type of biohacking you follow, you'll have to participate in regular blood tests to gauge results. Let us tell you that blood testing and analysis is the key to effective biohacking currently.

Regular blood tests can tell you all you need to know about the level of different nutrients in your body. Since the purpose of biohacking is to impact the body's genes, you must get regular blood tests done to know what's wrong before you can make it right!

For example, a blood test will help you determine if a food you recently started eating affects your vitamin levels. Therefore, you can set health goals and achieve them through regular blood testing. Another example is having blood tests before and after taking nutritional calcium supplements. By comparing the blood results, you'll know if the supplement has increased calcium in your body and if it's worth trying.

Simple and Safe Biohacking Techniques to Follow at Home

You should leave DIY biology and being a cyborg to the experts. However, that doesn't mean you shouldn't follow any biohacking techniques. Here are some simple yet effective biohacking techniques you can follow to lead a healthier life.

1- Drinking Caffeine

Who knew that drinking caffeine would allow you to take control of your body's biology? We did



because medical science approves it! Moreover, many biohacking experts recommend drinking caffeine regularly to kick start your biohacking journey. You can start by drinking 8-ounce of black coffee every day. If you don't want to drink coffee, you can also use other food products with caffeine like green tea or dark chocolate. Caffeine makes you more productive and creative, which is another biohacking goal to achieve!

2- Try an Elimination Diet

As the name suggests, an elimination diet consists of eliminating certain food items from your diet. Through an elimination diet, you'll stop consuming a food item completely

and then reintroduce it to notice its effect on your body. The effect will tell you if you should eat or avoid that food for a lifetime!

Benefits of Biohacking

You already know that biohackers aim to have a healthier life. But does that actually work? Scroll down to read the benefits of biohacking.

- Biohacking reduces the risks of many diseases, achieving the main purpose of being a biohacker! Many scientifically-approved biohacking techniques motivate you to eat plant-based food or avoid certain disease-inducing foods. For example, avoiding processed food can reduce

the risk of diabetes, cardiovascular diseases, and obesity.

- Biohacking also clears your mind and improves your mental health. Through biohacking techniques like sleeping better and interacting with nature, your brain can relax, allowing you to become more productive and improve your self-esteem.

- Moreover, biohacking improves your overall attitude toward life. Through biohacking techniques, you can spend more quality time with your loved ones, find a purpose in life, and be happy.

- *The Cyborggainz Media Team*

7 BIOHACKS THAT ACTUALLY WORK



The concept of biohacking gained popularity in the last decade when many people started to make efforts to control their minds and body. Many scientific researchers have acknowledged the role of biohacking techniques in gaining personal control. But scientists are still researching techniques and methods that result in effective biohacking.

If you want to start biohacking but don't know actual hacks that work, we are here to help. Scroll down, read, and try these expert-approved biohacks.

You would be surprised to know that something as simple as sleep is a tool that will help you control your mind and body. Many biohacking experts suggest improving sleep quality as it cleanses the mind and helps you focus better. Moreover, better sleeping habits can extend your life, strengthen your immune system, and prevent diseases. Many medical professionals have agreed that a lack of sleep can increase the risk of chronic diseases like obesity, cardiovascular diseases, and diabetes.



“Sleep is the simplest biohack that doesn’t cost anything and requires no effort. Sleeping puts you in a deep meditative state, where you can explore your subconscious. In addition, while you sleep, the neurons in your brain remove all metabolic toxins from the body.”

According to biohacking experts, the key to getting better sleep is to relax before going to bed. Avoid engaging in work-related things an hour before your sleep time to avoid stressing your brain. Participate in your favorite hobby that would calm you down. Moreover, you should also avoid watching television and phones, limit caffeine and alcohol intake, and prescription amphetamines before bedtime, as they can mess with your sleep schedule.

2- Spend More Time in Nature

Spending quality time in nature not only refreshes your body but also soothes your mind and relaxes it. Most doctors recommend patients spend more time in nature. According to scientific research, the natural environment can speed up our body’s healing processes. Therefore, if you want to make your body and mind healthier, we recommend spending more time outdoors. You can go for a walk, meditate in a park, etc., to feel calmer throughout the day.

3- Engage in Physical Activities

You must have heard people all around you emphasize the importance of regularly exercising, but do you know that moving your body is an effective biohack?

You don’t have to follow lengthy and complex exercises or join a gym for a healthier lifestyle. You can find what’s right

for you and do it daily. For instance, if you enjoy moving your body to your favorite songs, we recommend doing it as much as possible. The purpose of biohacking is to have a healthy body, and you can achieve that by participating in your favorite physical activity.

4- Eating Healthier Food

This biohacking list is turning a whole lot into a doctor's recommendation. But biohacking really is that simple! To lead a longer, healthier life, you just have to follow simple, low-effort biohacks. However, eating healthier food varies from person to person. The right food for every individual differs due to their metabolism, personal taste, cultural food, and medical conditions (if they have any). Therefore, biohacking experts don't recommend sticking to a particular diet for everyone.

However, the right biohack is to eat minimally processed, plant-based food as much as possible. You can also eat in a gathering with your friends or family, chew your food slowly, cook whenever you can, and choose organic foods to master this biohack.

5- Find a Purpose in Life

The internet is filled with self-help books, podcasts, and lectures that encourage you to find a purpose in your life. But do you know that finding your life's purpose is also an effective biohack?

However, biohack experts suggest not confusing happiness with purpose. If you chase happiness, your subconscious brain will force you to make decisions that give you the most dopamine. And those decisions may not always be morally right. But if you have a purpose in life, chasing that purpose will give you ultimate happiness. Start following a path that doesn't give you rewards initially but pays you later!

6- Making Moderate Wealth

Whoever said that money doesn't lead to happiness wasn't completely right. Whether we like it or not, many of us live in a capitalist world, and we need money to get access to basic life necessities. According to surveys, wealthy people live longer as they don't struggle to eat healthily or constantly worry about paying their bills.

People who make more money live in better neighborhoods with access to clean water and better security. In addition, having enough wealth gets you better health facilities and healthier food options. However, remember not to compromise your moral values, purpose in life, or sleep chasing wealth.

7- Connecting with People and Pets

Whether you're an introvert with a small social circle or someone who loves social gatherings, you have to agree that being with the right people can make every experience better. Biohacking experts say that humans need to have relationships to survive on the earth. If those relationships aren't with people and furry animals, you will form relationships with material items. However, we all know that choosing screens and social media over real-life friendships, relationships, and family time isn't the best decision.

According to medical reports, social isolation increases the risk of chronic diseases such as arthritis, diabetes, heart diseases, dementia, etc. People who don't interact with other people often stop doing the most basic tasks of daily life. Relationships with people and pets require you to put in some effort, giving you a purpose in life.

-The Cyborggainz Media Team



ATTAINING THE REALM OF UTMOST CLARITY

From extraneous work hours to despairingly frustrating traffic, there's always something to kill your mood on a daily basis. Pounding headaches, lightheadedness, lack of focus all come stringing along to the hardships we already suffer through every day. Brain fog is a term we are all too familiar with, a bodyguard to your creativity. Attaining a state of utmost clarity becomes increasingly difficult as our society advances into 2022, luckily there are a couple

of ways to boost your mind to its fullest potential.

Absolute mental clarity is defined as a state of perfected mental focus, free of the radical symptoms experienced by the world surrounding us. It gifts you a clear head to work with and peace of mind, pushing you towards the finish line of your goals. Being awake without all that much-needed caffeine excluding the jitters. Some influencers swear by a number of supplements to aid in achieving this state, however.

“There are multiple strategies you can use to naturally reach that level of clarity. Living intentionally through mindfulness requires full clarity, the eagle-like focus essential to productivity.”



Firstly, meditation remains one of the best and simplest tools to improve various parts of someone's lifestyle. A simple ten minutes of pure relaxation and concentration on your thoughts can give you that boost of clarity you need. Even better, if you are struggling with a particular task, meditate on it in order to find the best solution possible to solve the situation.

Secondly, simplifying your life, though a big change in lifestyle can often result in a clearer mind as you're able to focus on what's actually important with no obstacles in between you and your goals. Not obeying and responding to emails within a minute of receiving them, allowing yourself a cheat day, one day a week without electronics... Though it may seem impossible when you have an active lifestyle, decluttering your life is the best way to declutter your mind.

Thirdly, make a list. Keep in mind prior advice and don't overcomplicate it: simple bullet points to tell you where you're going and to keep you on track of your schedule. Instead of spending useless time stressing about what you have to do next, you can learn to utilize boredom in a productive manner and improve your focus to its tip-top performance. This allows some relief on your mental and you'll find yourself having accomplished more in a day than you thought possible if you simply follow your to-do list.

A brain dump is another effective exercise in this manner. It's quite easy and actually kind of fun as well as one of the best ways to declutter. It goes as follows: set a timer of about ten minutes on your phone with a pen and paper in front of you. For the next ten minutes write down every single thought that crosses your mind. Warning: it may surprise you! This is an amazing self-awareness exercise that will help you reach peak mental clarity in the span of 10 minutes.

Of course, exercise makes the list. The top and healthiest way to declutter your mind, rejuvenate your body, keep yourself active, and get enough oxygen is exercising preferably outside. The cold breeze and the action itself will have you focused in no time. Half an hour is all it takes and, though an obvious solution, is the most efficient time-wise way to get your head on your shoulders ready for the day. Something as simple as taking a walk around your neighborhood, walking your dog, even jogging in place for a bit refreshes your mind, leaving it a blank slate ready for sparkling new ideas.

Lastly, sleep is the most crucial aspect of mental clarity as a lack thereof leads to fogginess and exhaustion, the exact opposite of what we want. Though repeated over and over again in all the health articles you read, sleep remains the singular most important element in your lifestyle. Good resting hygiene is an absolute key to focus and anything less depletes your brain functionality. In other words, get those 8 hours of sleep. You'll be more awake, focused, and energized to take the work on.

Attaining the realm of utmost mental clarity is not an easy task and one that takes dedication and hard work. However, it pays off to take care of yourself. It becomes easy to get lost in the turmoil our society lives in, it's just important to not drown in the waves of it. Give yourself a rest, a pat on the back, and most of all, the opportunity to be as powerful as you are.

ABOUT NOEE MATHILDA SPIEGEL



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



MUSIC THERAPY:

Therapy has been around for hundreds of years, wherever humans live so do issues. This is obvious as we are all sentient beings with sometimes, unfortunately, dysfunctional minds. There have been countless advances in psychotherapy over the last decade and is one of the most rapidly advancing topics in society. We are constantly working together to find ways to establish mental stability. One of these “new” advances

is music therapy, except, it’s not so recent. In fact, music as a form of therapy has been around for thousands of years in traditional African communities, utilizing music to aid in healing and reestablishment of the mind. The idea of music as a form of healing dates all the way back to the writings of Aristotle and Plato and in certain ailments, long before that. The professions formally began in the mid of the 20th century when musicians, amateur

and professionals alike, began going to hospitals and playing for the veterans that have suffered the tremendous mental damage of the wars. The results were so incredible it led to doctors and nurses hiring musicians in their hospitals to aid in both physical and mental recovery. Flashforward to 2022 and music is giving other forms of therapy a run for their money!



AN ALTERNATIVE WAY TO TREAT MENTAL HEALTH ISSUES.

“Music therapy interventions can aid in alleviating pain, promoting wellness, managing stress, expression of feels, enhanced memory, physical treatments, and much more.”

How can something as simple as a tune benefit so much? It works by using participation in expressive and receptive music experiences, the therapists promote an environment

of trust and livelihood with general good vibrations that helps the patient let loose and be put to ease. It often involves making music, writing songs, singing, dancing, listening to music, and discussing art. It’s been shown to be particularly helpful for patients struggling with anxiety and depression but is open to anyone.

How can you participate in musical therapy a home? Of course, it is recommended to seek professional

help in such cases but that doesn’t mean there isn’t anything you can’t do in the comfort of your own home. Listening to music that encapsulates your current mental state is a great way to start. It is crucial to feeling your emotions to the fullest extent instead of numbing yourself down to them. Blasting that terrifyingly sob-worthy song after a bad day is an amazing way to alleviate some stress and let those feelings out instead of leaving them bottled up inside. This

works by enhancing the essence of your emotions and helping you express them in a healthy way, key to mental clarity. Another great way is doing the opposite. If you're tired of feeling sad and just need that energy boost to get yourself through the hard day, listening to a certain type of music actually changes your mood as you start melding into the song. Think about it, ever gone through a really tough day then listened to some happy jams and the next minute you're singing your heart out with a smile on your face. Actively listening to music is another effective therapeutic method. You often find yourself dancing to songs and the beat but not actually paying attention to the lyrics. Actively listening and analyzing the lyrics, reflecting on them and their meaning is an extremely intelligent manner of therapy that helps you register the lyrics and build an opinion on them. Writing a song based on your emotions and what you're feeling also helps as it aids in letting your feelings out in a healthy manner. Putting your thoughts and feelings down on paper along and singing it is an amazing way to communicate them to yourself or others, and who knows, maybe you'll

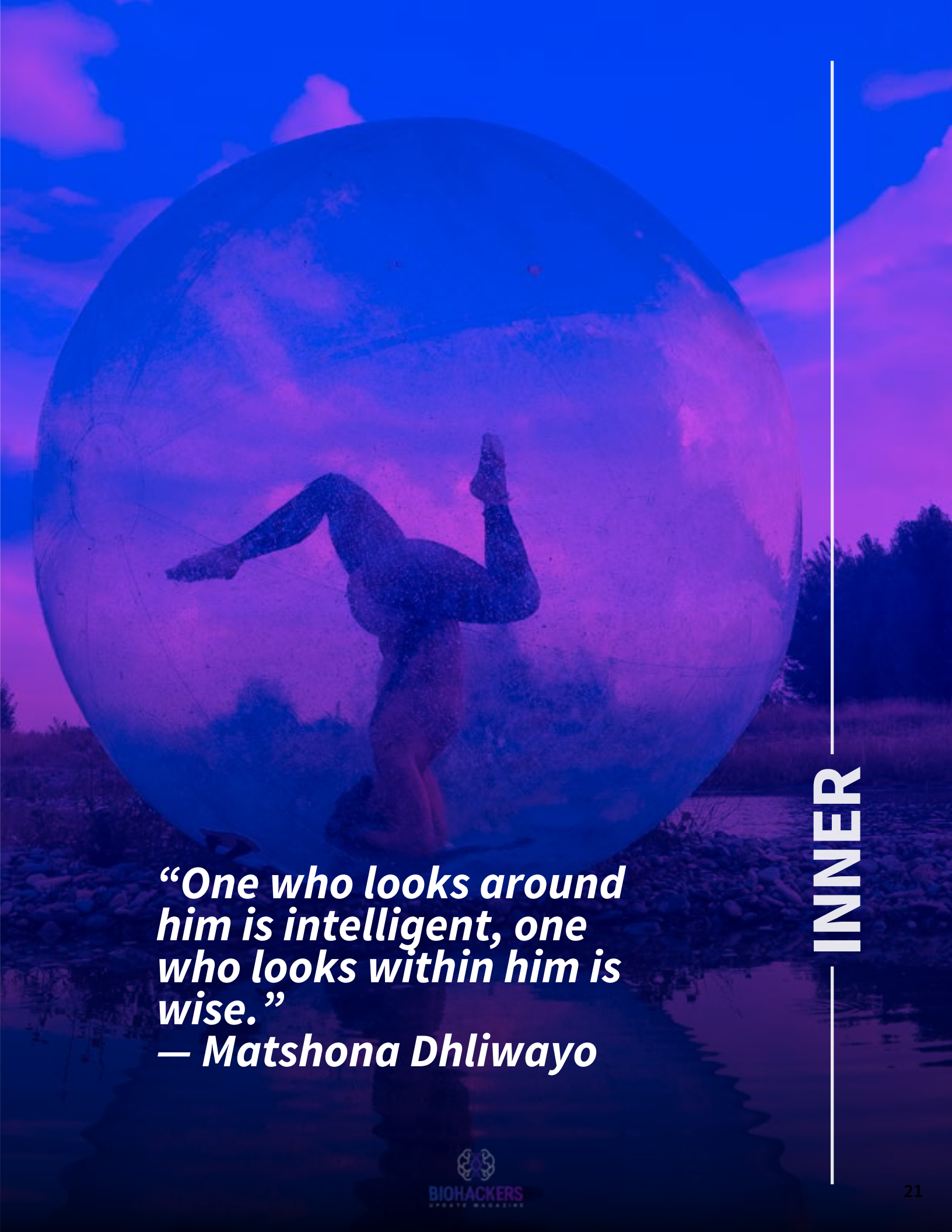
make a hit! It doesn't even need to make sense or sound poetic as long as it is raw and delivers your emotions in whichever way you feel. Lastly, listening to songs outside of your comfort zone is a way to be placed in a healthy and safe yet vulnerable position where you can experience new emotions without necessarily going into the outside world and getting your feelings hurt. Something as simple as listening to another genre can change your view on a lot of matters as well as boost your emotional intelligence and diversify your interests.

Music is an art form that deserves to be appreciated to its fullest extent. What better way than to use it as a tool for healing yourself and your mind? Sometimes the best way to biohack your brain is the gentlest approach of music to your ears to guide you in a realm of pureness and comfort. Though not the most conventional form of therapy, it's worth a try. Highly deserving of the attention it has been receiving, musical therapy may be the new best approach to treat mental disorders. Live unconditionally, listen to a song.

ABOUT NOEE MATHILDA SPIEGEL



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

A person is performing a handstand inside a large, transparent sphere. The sphere is positioned in a natural setting with a sunset or sunrise sky in shades of orange, red, and purple. The person's silhouette is visible through the sphere, and their reflection is seen in the water below. The overall mood is contemplative and serene.

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

INNER

BIOHACKING YOUR DIET:

**NUTRITIONAL BIOHACKS
TO BOOST YOUR
IMMUNE FUNCTION**



Biohacking is the ultimate goal of health, and represents the need to improve your biology, body and mind. If medicine focuses on treating disease and sick people, biohacking on the other hand is a tool for normal people who want to get better at any level of their health: sleep, mental clarity, nutrition, exercise and performance. For these reasons we talk about biohacking as a holistic science with the goal to elevate the human condition to the best possible level.

“To embrace biohacking you don’t need to radically upset your routine, diet and behaviour, but you should start small and think big. It means making small and incremental diet and lifestyle changes, possibly with the help of practitioners and experts in the field: personal trainers, nutritionists, biologists, biohackers and health coaches. Tiny changes, if made daily, can lead to massive results, also in the sphere of biohacking.”

The more you know yourself, the more chances you have to improve your health. For example, start to measure your sleep quality with an app tracker, or your own daily intake of micronutrients with the help of fitness apps, or maybe to a deeper level, your urine pH, ketone bodies and glucose blood level.

In that last case you’re biohacking your nutrition, because this data will help you to make better decisions when it’s time to choose the food you are going to eat.

Particularly in the era of the corona pandemic it becomes also more important to focus your attention on what and when (yes, because also timing matters) you eat, and biohacking nutrition, because nutrients affect the immune function.

First make sure to measure your 25-OH vitamin

D levels, and if they are low, an option could be to consume more animal fatty food or going outside and inviting the sunshine on your eyes and skin. Vitamin D works in synergy with vitamin A, an immuno-modulator which protects the cells from infection diseases. The best vitamin A rich foods are liver and grass-fed butter. So you could try to cook your food with animal fats and butter instead of vegetable oils.

Another immune-modulator is curcumin, an antioxidant found in curcuma, a powder that you can utilize to enhance the flavour of food - but make sure to use pepper if you want to augment the absorption of the active principle. In the cellular model curcumin shows to inhibit the Nf-Kb complex, related to inflammatory processes.

Certain types of mushrooms could also have immuno-stimulants properties. I’m talking about cordyceps, reishi, maitake, shiitake, utilized in the Chinese medical tradition in the form of supplements, powder, or maybe coffee.

Other biohacking nutrition tips to consider: Why not



start your morning routine with a bulletproof coffee, made with coconut oil? The reason is that this tropical oil contains lauric acid, a potent antiviral, also present in human breast milk.

The trace element with the best action in terms of immunity is zinc. We can provide zinc to the body by eating red grass-fed meat, oysters, shellfish, shrimps, liver, eggs and finally cheese made with raw milk.

The best food on planet earth are raw eggs and raw milk, because they are designed from nature to grow a baby and pump up his immune function. With access to high quality eggs and milk, a super drink can be made

with mixing raw milk and eggs from hens free to roam around.

I can't finish the review without mentioning the nutrient with the best antioxidant, detox and purifying function: betaine of the betalaine group, found in beetroot. So try to find time to make a post-workout beetroot juice!

Try biohacking nutrition with the help of a certified nutritionist.

If you need support, I can create a customized nutrition plan based on your health goals.

ABOUT DR. SAMUELE VALENTINI



Dr. Samuele Valentini is a biologist and nutritionist, with a double degree in Biological Sciences and Biology applied to the Nutritional Science, graduated at the University of Milan, Italy.

He works in the clinical setting, in many private clinics in the province of Rimini, Italy, after an experience in a research group at the Policlinic San Donato Hospital, in the province of Milan.

He helps people to reach their weight and health's objectives through the prescription of

accurate and personalized nutrition and supplement (if necessary) plans.

He works in the biohacking field from many years, improving human condition not only with dieting, but also the administration of tms therapy (transcranial magnetic stimulation) to patients (especially with mental health problems) at the Brain&Care Clinics, also present in Miami (GIA Miami). He also works at the San Giuseppe Clinic based in Riccione (Rimini, Italy), specialized in the use of ozone-therapy through GAE (autologous blood treated with ozone), infiltrations and colon hydrotherapy.

In the free time he loves doing triathlon, trekking, weight-lifting and writing articles about biohacking.

Here's where you can find him:

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Take over your Dreams:

let your mind speak.

Have you ever woken up from a dream and wondered, what on earth was that? Only to forget it all seconds later as your mind tries to run over the more intricate details? Dreams help process emotions, thoughts, trauma, and pretty much everything that happens in our day-to-day life. The emotional regulation dream theory states that the function of dreams is to aid us in processing and coping with our emotions and trauma in the safe slumber sleep constitutes. We already know sleep is an essential part of life and is one of the most basic needs that humans rely on to function, however, sleep comes in a diversity of phases, each as important as

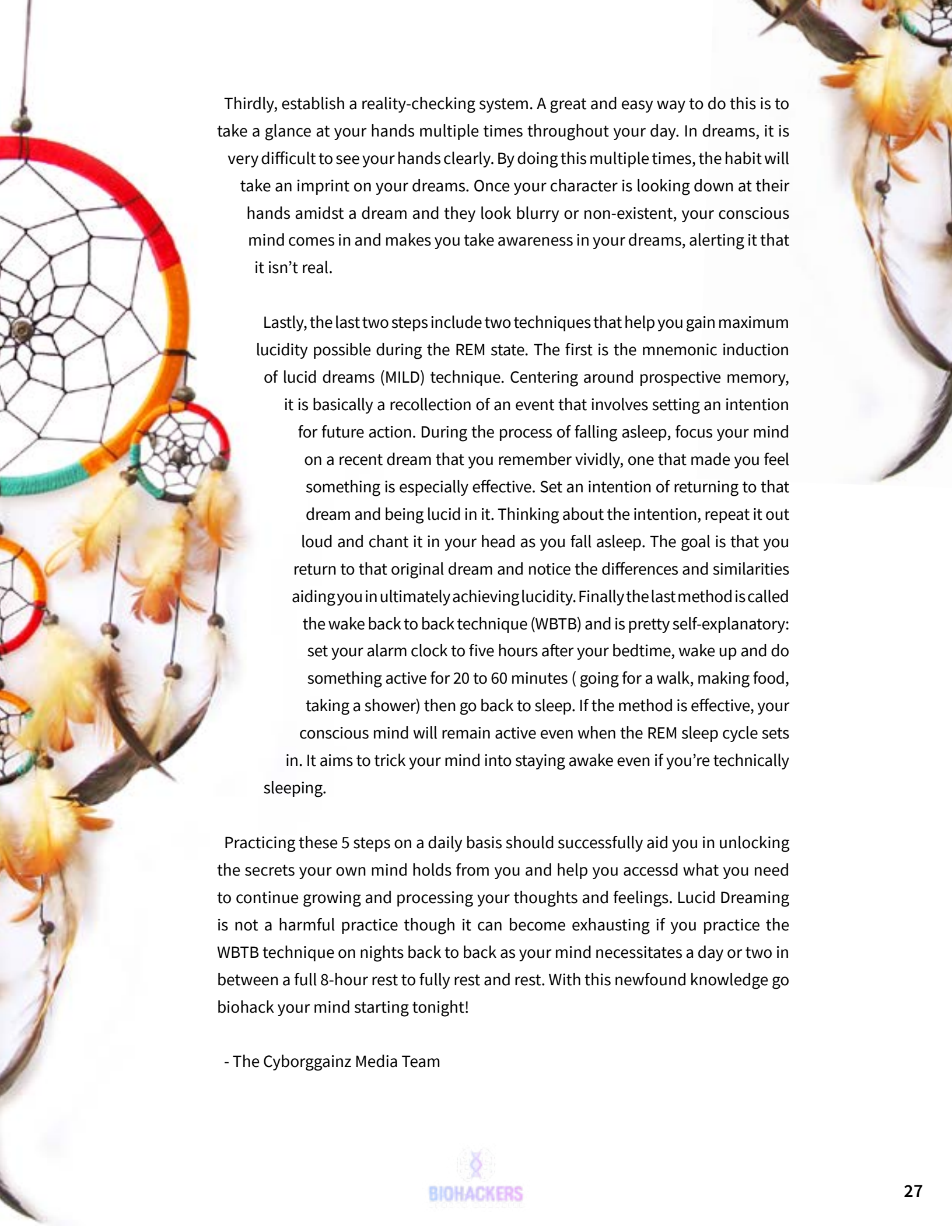
the last. Dreaming in particular occurs in the REM phase in which your brain becomes relaxed and immobilized, eyes move rapidly and of course, dreams occur. This is the deepest state of relaxation your mind occurs and is where all the magic happens, including lucid dreaming: the ultimate mind hacking technique.

Lucid dreaming refers to a particular mental state in which the individual gains an awareness of the dream state he is in. This kind of awareness is classified as “insight.” and is a clever way to biohack your mind to the next level: hacking into your subconscious.

Similarly to Pandora’s box, dreams hold meaning

and a sort of deeper insight per say, into your mind. We spend the majority of our day simply thinking thoughts, thinking of our thoughts, and analyzing them. This occurs mostly in a conscious state meanwhile our subconscious, the more intricate and secretive part of the mind absorbs your surroundings, emotions, and deeper thoughts that you may not even realize you're thinking. Once we reach the point of exhaustion and our eyes finally close for a good eight hours (if you're lucky) it's time for the subconscious to shine, producing 4-6 dreams a night. Sadly, we often wake up not remembering anything from the night, letting thousands of hidden significance flow away into the imagination. Lucid dreaming acts as a sort of key into the treasure chest that is your mind and will often make you take a step back and act as a spectator within what your mind has to say. It's no wonder the study of dreams is a wide section of psychology, often used by psychiatrists and therapists to further analyze the mental wellbeing of their patients. Unfortunately, unless you're one of the lucky ones, lucid dreaming is a craft that necessitates preparation and practice, rarely occurring naturally. Thankfully, there are ways to train your brain into lucid dreaming with little work, allowing you to truly get a glimpse at what your mind is all about.

Firstly, it's crucial to take part in good sleeping hygiene. What this means is obtaining the recommended eight hours of sleep, going to bed at a reasonable time, slumbering in a dark cool environment, etc... Consistency is key for effective sleeping hygiene and helps you absorb all the benefits sleeping brings to us. After this is established, consider making use of a dream journal. In simple terms this includes a journal that is ideally placed on your bedside table. Seconds after waking up in the morning, jot down every detail of the dreams that you remember no matter how vivid or vague. Practicing this habit consistently helps to see recurring themes and helps you process your thoughts, furthermore, it works as a mindfulness exercise which is extremely beneficial for mental health and is recommended by a number of therapists. In order for this to reach peak efficiency, it's best when it's done every morning as a sort of morning routine, the same as brushing your teeth, opening your blinds and showering.



Thirdly, establish a reality-checking system. A great and easy way to do this is to take a glance at your hands multiple times throughout your day. In dreams, it is very difficult to see your hands clearly. By doing this multiple times, the habit will take an imprint on your dreams. Once your character is looking down at their hands amidst a dream and they look blurry or non-existent, your conscious mind comes in and makes you take awareness in your dreams, alerting it that it isn't real.

Lastly, the last two steps include two techniques that help you gain maximum lucidity possible during the REM state. The first is the mnemonic induction of lucid dreams (MILD) technique. Centering around prospective memory, it is basically a recollection of an event that involves setting an intention for future action. During the process of falling asleep, focus your mind on a recent dream that you remember vividly, one that made you feel something is especially effective. Set an intention of returning to that dream and being lucid in it. Thinking about the intention, repeat it out loud and chant it in your head as you fall asleep. The goal is that you return to that original dream and notice the differences and similarities aiding you in ultimately achieving lucidity. Finally the last method is called the wake back to back technique (WBTB) and is pretty self-explanatory: set your alarm clock to five hours after your bedtime, wake up and do something active for 20 to 60 minutes (going for a walk, making food, taking a shower) then go back to sleep. If the method is effective, your conscious mind will remain active even when the REM sleep cycle sets in. It aims to trick your mind into staying awake even if you're technically sleeping.

Practicing these 5 steps on a daily basis should successfully aid you in unlocking the secrets your own mind holds from you and help you access what you need to continue growing and processing your thoughts and feelings. Lucid Dreaming is not a harmful practice though it can become exhausting if you practice the WBTB technique on nights back to back as your mind necessitates a day or two in between a full 8-hour rest to fully rest and rest. With this newfound knowledge go biohack your mind starting tonight!

- The Cyborggainz Media Team

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BIOHACKING YOUR WAY TO LONGEVITY

2022'S MOST EFFECTIVE TIPS - AND THE SCIENCE (AND NATURE) BEHIND WHY THEY WORK

Ageing just like your parents, grandparents and great-grandparents did is inevitable, right? Wrong! There's never been a better time to age gracefully and slowly. Scientific research has come up with a plethora of simple, effective ways proven to not only help us keep feeling and looking younger but to also actually help us fight age-related illnesses and live to a much older, riper age. What's more, with many children born today expected to live well into the 22nd century – where living beyond 100 may well become the norm - we need to be educating the

next generation on taking better care of themselves for longer.

Dr Elena Seranova, interdisciplinary scientist and founder of NMN Bio Ltd, shares the science behind the current crème de le crème methods to biohack your way to longevity.

Tip#1 Hormesis

Hormesis is one of those terms that sounds more complex than it is. Hormesis is actually very simple – and very, very effective. We have various stressors for our bodies that activate our ancient survival mechanisms (perhaps there's a

little bit of caveman and woman in all of us!) and this is the process of hormesis. This activation typically comes in the form of cold therapy or heat therapy. So, a very cold shower, or a warm and toasty sauna for example (you can guess which of those is more popular!). Hypoxia (exercise achieving VT1) or exposure to certain phytochemicals are other ways to achieve the benefits of hormesis. A lot of us include cold or heat therapy in an occasional gym or spa visit but building hormesis into your life on a regular basis can have a profound impact on how well you age – it's even been shown

to activate SIRTUINS, the bodies longevity genes (more on those later).

References:

1. Hormesis is defined as a phenomenon in which a harmful substance gives stimulating and beneficial effects to living organisms when the quantity of the harmful substance is small (Sakai, 2006).

2. Handbook of Toxicology of Chemical Warfare Agents (Second Edition), 2015

Tip#2 Intermittent Fasting

Want to keep those eyes bright and sparkling and your skin elastic and youthful? Stepping away from the fridge (and those snacks hidden in a desk drawer!) for a prolonged length of time really can be key. Intermittent fasting is well regarded amongst the anti-ageing community as an essential way to aid longevity. Research shows a good fasting window would be a 4-hour or 6-hour window. If you can, it's even better to start with an 8-hour fasting window during the day and 16 hours of fasting and then to progressively shorten the window. One of the reasons intermittent fasting is very good for you is it regulates blood sugar and it's another hack that activates those longevity genes.

Fasting is also a known way to activate AMPK, the catabolic process involved in recycling the body's

components termed autophagy. How to take your autophagy level and intermittent fasting to the next level? Caloric restriction is closely linked to intermittent fasting... If you're introducing caloric restriction every now and then by eating fewer calories than you need within a day, keeping your calorie intake below your maintenance level, this has also been shown to extend lifespan. By introducing caloric restriction once a month to start with and then even a couple of times a week (if your caloric maintenance is 1500 calories a day, caloric restriction would be to have just 750 calories on the day), you enhance your autophagy, that would in turn clear out dysfunctional mitochondria, aggregate-prone proteins and ensure your cells are healthy and happy.

References:

1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6836017/>

2. <https://blog.insidetracker.com/intermittent-fasting-impacts-longevity-summary-research>

3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3014770/>





Tip#3 Breath Work

Breath work has gained enormous popularity over the last year - and for good reason. The benefits of mastering breath work can have a profound effect on your health and, consequently, your longevity.

A lot of breath work focuses on the idea of honing the ability to tap into our autonomic nervous system, which controls a lot of our breathing. An evolutionary trait means our autonomic nervous system picks up external signals that keep us in a stressed state - the autonomic nervous system can't tell the difference between running for a train and running from a bear! Too often, it keeps us in a state of fight or flight, causing irreversible damage to our bodies. Consequences of spending too long in this state include high blood pressure and indigestion - essentially our autonomic nervous system is shutting down less essential systems to divert blood and energy to where it's most needed to prepare us to run from the (imaginary!) bear. So we don't heal and rest properly.

A great breathing technique to

begin with is box breathing, to balance the autonomic nervous system and bring the body out of the fight or flight state.

Tip#4 Clearance of Senescent Cells

Senescent cells, put bluntly, are zombie cells taking up space in our tissues that need clearing out. Senescent cells accumulate as we get older, and they don't proliferate. They are essentially redundant cells that secrete information and faulty, inflammatory signals to other neighbouring cells - in turn turning more and more of those neighbouring cells into senescent cells. A fantastically simple, proven way to clear out senescent cells is to consume natural compounds like quercetin, fisetin and apigenin, that have been classified as senolytics, or substances that are able to flush these zombie cells out of your system.

Eating foods that contain these compounds - for example dried parsley, apples, persimmons, grapes, onions, cucumbers and strawberries, 2 - is another way to encourage clearance of senescent cells.

References:

- [1.https://lifeapps.io/nutrition/an-apple-a-day-keeps-the-senescence-at-bay/](https://lifeapps.io/nutrition/an-apple-a-day-keeps-the-senescence-at-bay/)
- [2.https://www.lifespan.io/news/a-summary-of-apigenin/](https://www.lifespan.io/news/a-summary-of-apigenin/)

"When we use the ability to tap into our breath and start to control our breathing we don't have to depend on outside signals - we can purposefully tell our bodies we are not in a stressed, heightened state. Mastering important breathing techniques improves how our autonomic nervous system works, and benefits include a boost to our healthspan and longevity, by preventing the damage otherwise caused."

Tip#5 Anti-Ageing Supplements

As the amount of scientific data grows, the benefits of anti-ageing supplements become more and more evident. Some of the standout supplements for 2022 to support biohacking your longevity are:

Curcumin - a well known supplement for fighting inflammation. One of the main reasons we get so many diseases later in life is the increasing inflammation in the tissues, so keeping it at bay is crucial. In fact, inflammation has recently been identified as one of the fundamental hallmarks of aging. From autoimmune diseases such as osteoarthritis, to a deteriorating immune system function and increased risk of infectious diseases, we can see that controlling inflammation is as important as breathing with age. Curcumin is just one supplement that can help you achieve that.

Beef liver capsules - rich in vitamins B, act as a methyl donor. The process of methylation is important for correct gene expression, that in turn supports overall cellular health.

NAD boosters - NAD (Nicotinamide Adenine Dinucleotide) is an essential molecule that we simply cannot live without. It is implicated in more than 50% of

all cell reactions and is an essential enzyme necessary for proteins to function, such as proteins linked to SIRTUINS (the longevity genes) that are implicated in DNA repair and mitochondrial production.

References:

- [1.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5664031/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5664031/)
- [2.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6266735/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6266735/)
- [3.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6342515/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6342515/)

Tip#6 Measure Interventions as You Go

Around 60-65% of adults take some form of supplement every day, but what percentage are measuring the positive impact and effectiveness of those supplements? Before starting a new supplement, you should first research which blood biomarkers or genetic biomarkers you can measure in order to make sure that when you take a supplement - or use any other intervention, such as those mentioned above - you can measure the before and after impact. This can help ensure the type of supplement - and even the dosage - is the most effective one to support your healthy ageing and longevity.

ABOUT ELENA SERANOVA, PH.D.



Elena Seranova is an interdisciplinary scientist and holds a Ph.D. in Stem Cell Biology and Autophagy from the University of Birmingham, UK. She is the founder of [NMN Bio](#), a UK-based, anti-aging supplement company.



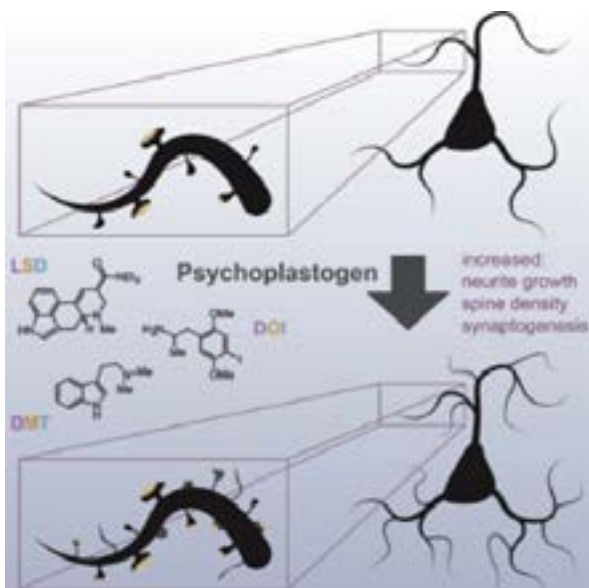
**CHEMICALLY
SCAFFOLD YOUR
NEW BRAIN THROUGH
THE USE OF PSYCHEDELICS.**

Okay, so, if you are one of the many people in this world who have ever taken a psychedelic substance, you would have experienced the whole ‘the clouds are smiling and waving at me’ episode, along with the definitive thought that yes, we actually are all aliens, after you’ve peered in your bathroom mirror.

But what if it goes deeper than all of this? Well, it does, and that is exactly what science is now beginning to let us know.

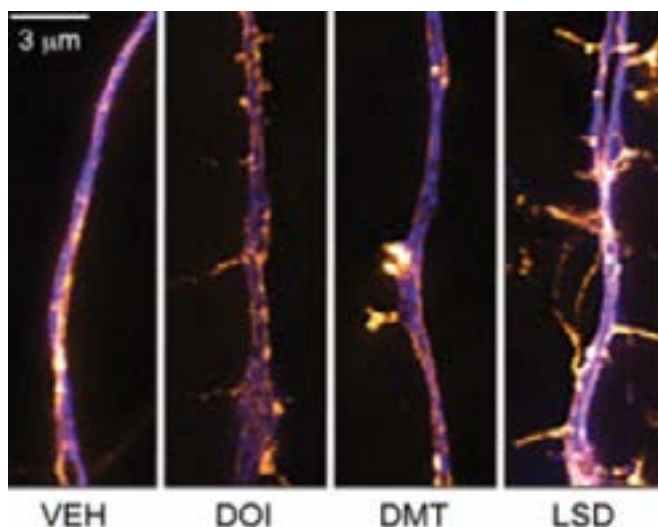
“I connect the psychedelic dimension to the dimension of inspiration and dream” - Terence McKenna

As a definition, psychedelics are psychoactive substances that possess the ability to alter cognition and perception by triggering neurotransmitter receptors in the brain. Most recently, psychedelics are being shown to promote the growth of connections between neurones, known as synapses. These novel connections between neurones are in areas of the brain, such as the prefrontal cortex, that regulate emotion and mood.



Psychedelics Promote Structural and Functional Neural Plasticity (Ly et al., 2018)

Researchers now suggest that what you will spend months, or even years, trying to achieve with pharmaceutical drugs or even practices such as meditation, you can achieve with a single dose of psychedelics in a matter of hours and days.



Psychedelics Promote Structural and Functional Neural Plasticity (Ly et al., 2018)

It seems to be that psychedelics share a common ability to promote structural and functional neural plasticity in cortical neurones. This mechanism is mediated by activating the major regulator of growth in animals, known as mammalian target of rapamycin (mTOR). The exact mechanism by which psychedelics stimulate mTOR is still not entirely understood, but data suggests that tropomyosin receptor kinase B (TrkB) and serotonin 5-HT_{2A} receptors are involved.

Such evidence has birthed a new term that acts to classify the growing number of compounds capable of rapidly promoting induced plasticity, coined “psychoplastogen”.

“In history, psychedelic plants were used by priests and shamans with a desire to discover the interior” -- Alejandro Jodorowsky

However what does this all mean in the context of our mental health? Well, recent studies have revealed evidence that depression manifests as structural changes in brain circuits or atrophy within the prefrontal cortex. This doesn't mean that neurones die off during depression, but that neurites retract and tend to shrivel up (a neurite is the section of a neurone that projects out to bridge the gap between two neurones at the synapse). Thus, as the evidence presented above suggests, psychedelics could very well be the key to growing back those withered neurites and changing our overall sense of clarity and self.

If you are in fact a psychedelic newbie, and you are yet to try out one of the many wacky substances available to you, I hope that after reading this article you feel more ready to take the plunge and get trippy. Who knows, you may grow some extra brain cells in the process!

Key Points:

- Psychoplastogens promote synaptic growth through a similar signalling pathway involving the protein mTOR
- Serotonergic psychedelics increase neuritogenesis, spinogenesis, and synaptogenesis
- Psychedelics promote plasticity via an evolutionary conserved mechanism
- TrkB, mTOR and 5-HT2A signalling underlie psychedelic-induced plasticity

ABOUT JESSICA ALANA



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

Quote: “Medicine has become a place

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

[The Wellness Lab](#)

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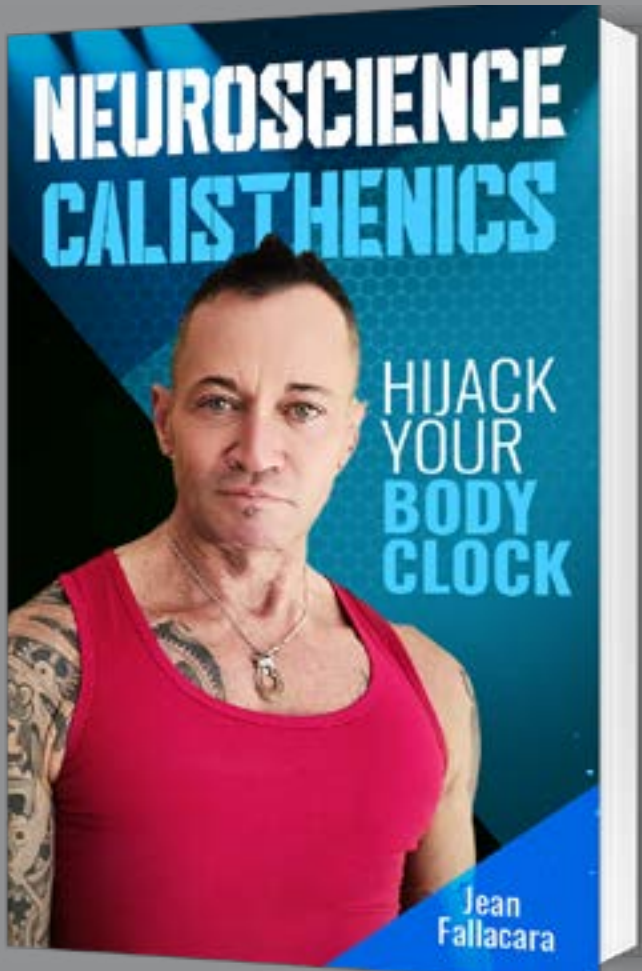
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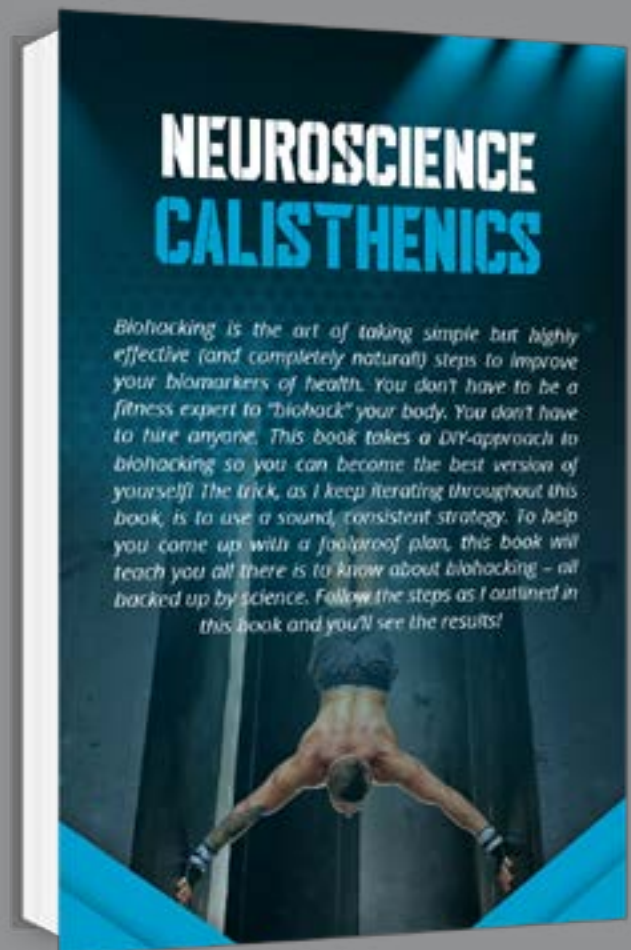
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AN INTERVIEW WITH YOUR MITOCHONDRIA

The human body's cells consist of mitochondria, which are known as the powerhouses of these cells. These tiny, complex, elongated structures, known as organelles, have an inner and outer membrane through which oxygen, carbon dioxide and water pass. Mitochondria are responsible for breaking down nutrients and converting it to energy. They are found in abundance in every cell and are heavily concentrated especially in cells that require an abundance of energy.

Recently I had a chance to sit down for an interview with one of the trillions of mitochondria in the human body

who generously took time out it's busy schedule to give us this rare and valuable perspective. In this interview, I was given an unprecedented insight into the mind of our mitochondria. Some of you may question how I, a relatively unknown armchair biophysicist, am able to get such a rare and privileged interview with the Powerhouse of the Cell. The answer is simple. I'm making it up.

INTERVIEWER: Can you tell me once and for all are you an alien?

MITOCHONDRIA: The question is am I from the Earth or am I alien? It's a complicated answer. What you need to know is 1.45 billion years ago I showed up on this planet looking to get in on the ground floor of something big. And I was willing to work hard for it.

It was very early in Earth's history, oxygen breathing life was still mostly unicellular. Simple lifeforms were just getting started themselves. And these simple lifeforms also had their own massive plans. When we met we realized we had something the other needed and so we made a deal to co-exist and work together. That's how our

genomes became intertwined. And that relationship has lasted almost a billion and half years.

That deal we made is very complementary. The cell fuels mitochondria with nutrients that we break down to protons and electrons to produce ATP energy and metabolic water for the benefit of the cell. This has been a glorious strategy for the evolution of very simple lifeforms to the highly complex ones that exist today. This is the teamwork that makes the dream work.

So, it should be no mystery why humans have two types of DNA. There is nuclear DNA, which is our terrestrial DNA that comes from that first eukaryotic (oxygen breathing) cell, and Mitochondrial DNA, that mysterious organelle of unknown origin providing energy for life which is passed down matrilineally. Mitochondrial DNA allowed humans to trace themselves back to one common female ancestor, what scientists refer to as Mitochondrial Eve.

INTERVIEWER: There is so much to learn about the mitochondria, but if all the time we had together is a short ride in an elevator, what would be the thing you would want to share with humans?

MITOCHONDRIA: Sincerely, if I only had a few seconds to grab your attention, for your own good, I would scream in your face, HELP!

In this current time very few humans are doing right by their mitochondria, the evidence shows that most of humanity are not living a lifestyle that is beneficial optimizing mitochondrial health, so I am here to impress upon you a reason for change.

**“Help me bring out the best in you
before it brings out the worst in me”
– Your Mitochondria**

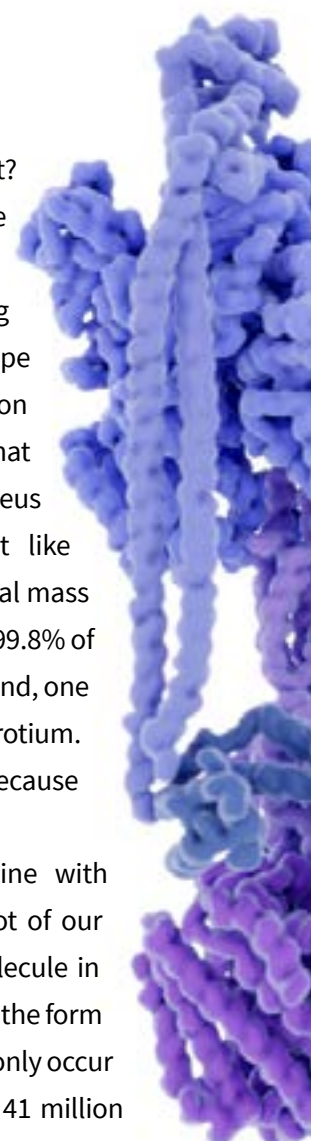


INTERVIEWER: Let's get started with some fun facts so our audience can be better prepared to follow along. Without Mitochondria it would be difficult for oxygen breathing life to exist. Mitochondria produce and recycle cellular energy known as ATP (adenosine triphosphate) via respiration. Cells, if they require more energy, via mitogenesis produce more mitochondria.

Heart muscle cells have about 5,000 mitochondria. Whereas the sperm cell will have nearly 25–50 mitochondria arranged in a helix fashion. An Ideal cell has 1000–2000 mitochondrial power factories per cell. Is this right?

MITOCHONDRIA: Yes, in fact the reason heart cells have so many mitochondria is they need to continuously pump blood and maintain a circulatory equilibrium. Serving this function requires energy continuously. Lucky for you this respiration never stops, operating 24/7 365 to keep you alive for as long as it can.

You should be aware that neurons, although having no moving parts, have a lot of mitochondria. Neurons are very high maintenance because of the continuous need to re-establish the sodium and potassium gradients after every action potential. Firing neurons requires a lot of ATP.



But since we are on the subject of trivia, the greatest concentration of mitochondria in the body, one should know, is in the retina. Specifically in the rods and cones, within a highly specialized part, called the inner segment. It is stacked with nothing but mitochondria.

Each rod has several hundred mitochondria jammed into this portion which is closest to the outer segment where light creates signal. The cones have even more mitochondria than the rods. There is no tissue in the body that has a greater concentration of mitochondria. Vision requires the highest density of energy production the Universe can create. The visual cortex is the height of sensory evolution, and it has no energy to waste.

INTERVIEWER: Fascinating. It's too bad Mitochondria can't just work the same forever. Can you explain why is it that so early in our youth we peak in terms of mitochondrial health and ATP production, and after our 20's we experience a gradual decline of mitochondrial energy in the body?

MITOCHONDRIA: Great question! It all has to do with what we are all made from! Mitochondria and everything else with flesh and blood and a central organized nervous system is mostly water.

98.8% of the molecules that make up the body are water! The average adult human body contains 45 liters of total body water. And the mitochondrial DNA in partnership with your nuclear DNA have collaborated to run a perfect and efficient vessel. Did you know the average human body recycles and transfers 1900 gallons of water every day to produce ATP? Most of this water is constantly recycled metabolic water.

Metabolic water is very unique, unlike most of the fresh water on the planet which contains 150 PPM of deuterium, metabolic water has 10-60 PPM of deuterium. The less deuterium, the healthier the mitochondria and the more ATP is produced.

INTERVIEWER: Deuterium. What is that?

MITOCHONDRIA: Deuterium is the mitochondria's worst enemy.

Deuterium is a naturally occurring element, also known as the second isotope of hydrogen. It is in fact a heavier version of the very first element hydrogen that makes up 75% of the Universe. The nucleus of deuterium contains a proton just like hydrogen but also has a neutron of equal mass which normal hydrogen does not. Thus 99.8% of hydrogen in the Universe is the simple kind, one proton, one electron, and it is called protium. The rest is deuterium hydrogen, and because of the extra neutron it is twice the mass.

Both protium and deuterium combine with oxygen to form water. And this the root of our problem. In normal water, about 1 molecule in 3,200 is HDO (one hydrogen in 6,400 is in the form of D), and heavy water molecules (D2O) only occur in a proportion of about 1 molecule in 41 million (i.e. one in 6,4002). This amount of HDO in water is the equivalent of about 3 drops in every glass of water. This is significant because HDO changes the weight and the charge of the water molecule and thereby changing the physical and chemical behavior of water.

The deuterium concentration of water varies by latitude and altitude. Generally, deuterium content is lower near the north and south poles, towards the middle of continents, and high above sea level. The oceans and

coastal areas have levels of about 155 parts per million (ppm). Concentration of deuterium in living organisms varies between 110-155 ppm. HDO has been gradually increasing on the planet, and the more there is the worse it is for the mitochondria.

Those areas on the planet that have naturally less deuterium in their water, even by a delta of 10-20% gives

the local population a huge advantage in terms of health and longevity. In fact, when this was first observed with the Yakutians of Siberia in the 1950's, it was discovered they had 324 centenarians per million people, whereas the average in Europe and Asia was only 8 people over 100 years of age per one million.

The average 120 lb. human if you rung them dry like a chamois would give you 70 lbs. of body water. This total water in the body contains 1.1 grams of deuterium. It doesn't seem like much, but it is the bane of our existence.

There is 4-6X more deuterium in our blood plasma than glucose, magnesium, calcium, potassium and the basic nutrients needed for life. This heavy hydrogen known as deuterium wrecks havoc on the mitochondria from the day of birth to the day of death. The damage is primarily done within the inner membrane spaces where cellular respiration happens, where complex enzyme nano motors produce the ATP energy we need for life.

INTERVIEWER: Is this a relatively new discovery?

MITOCHONDRIA: Yes, even though it was known from the 1930's that deuterium is the anti-life element, the breakthrough in the understanding of the actual mechanism by which deuterium damages the mitochondria was first discovered in 2007 by Prof. Dr. Abdullah Olgun, a medical doctor, biochemist and pharmacologist from the Department of Biochemistry and Clinical Biochemistry at Gülhane School of Medicine in Ankara, Turkey.

His discovery, presented in Biological Effects of Deuteration: ATP Synthase As An Example was the first time anyone showed how deuterium damages the mitochondria, right in the last step of our ATP energy generating mechanism called the Electron Transport Chain, in the ATP Synthase nano motor.

Did you know that 130 lb. person produces and recycles 160 lbs. of ATP per day? That is the power of the mitochondria! ATP Synthase nano motors are fueled by hydrogen protons, spinning at up to 9000 RPM, and perfect efficiency to collectively creating and recycling more than your own body weight of ATP.

There is one deuterium for every ~6,400 proton transfers in nature .At 1,500 protons/second transfer velocity the nanomotor would break down every ~4.26 seconds (6400/1500) in environmental water. So about every five seconds deuterium chokes our ATP producing in the trillions of ATP Synthase nano motors. This interferes in our energy production system. It's a cumulative effect that is one of the main reasons humans age.

The deuteron (proton + neutron) has no place feeding into the motor that only expects a simple proton. So it jams the motor causing it to stutter and breakdown almost as fast as it is created, and this Olgun explains in Deuteration and Aging, published the same year in the Annals of the New York Academy of Sciences. It implicates deuterium as the primary cause of aging. The mystery of how deuterium damaged life was finally revealed. A

select few have grasped the significance of his discovery. However, most scientists are yet to comprehend the Nobel Prize worthy significance of Olgun's breakthrough in biology.

Power Hungry? So are your Mitochondria!

INTERVIEWER: That is some seriously heavy stuff. So what does your day look like when you are aren't busy blowing our minds with knowledge?

MITOCHONDRIA: My day consists mostly of eating. In fact, I eat non-stop. If I may confess, I am the reason why everything in nature is always hungry and why everything wants to eats everything else. My appetite knows no bounds! I have a difficult job to do and I need constant nutrition to make it happen. I'll make the cells all the cool energy and click metabolic water they need, just keep the food coming! And if you want to keep me super healthy, the best thing you can do is reduce the constant burden of deuterium on my ATP Synthase nanomotors.

Every time a deuterium hits these nano motors it causes them to stutter, torque and jam. This wear and tear eventually destroys the delicate phospholipid membranes holding the motors in place, and then protons start to leak, motor slows down, a panic ensues, signals are sent to shut down the motors, then the production line, and eventually the entire factory. As mitochondrial factories shut down, the cumulative loss leads to the eventual inevitability of not being able to make enough energy to run the cell. At that point, apoptosis ensues, or the death of the cell. This insolvency and liquidation is final. The once thriving cell with thousands of mitochondrial factories, and billions of nanomotors is scrapped and demolished to exist nevermore.

INTERVIEWER: Since we now know high deuterium levels have been linked to complex disruption of cellular processes and 60+ years of clinical research points to the

systematic destruction of mitochondrial function as the primary risk from excessive endogenous deuterium in cells, what can we do to lessen the impact of deuterium in the mitochondria?

MITOCHONDRIA: Two simple interventions exist to limit the deuterium induced damaged.

The first is to consume water that is lower in deuterium. With regular consumption of deuterium depleted water allows one to naturally reduce the content of HDO in the human body due to isotopic (H-D) exchange. It is believed that this deuterium depletion process is accompanied by an increase in the functional activity of cells, cell tissues and organs as well as the normalization of metabolic processes, energetic invigoration of the body, and a more rapid recovery after strenuous physical exercise. Failing of the body's natural deuterium depleting processes gives the opposite result; cancer, metabolic and neurodegenerative disease.

The second simple intervention to keep your mitochondria in peak form is to follow a ketogenic



diet. Three respiratory pathways make ATP energy, depending on the nutrient and availability of oxygen.

Glycolysis (w/o oxygen) creates: 2-4 ATP.

1 glucose molecule creates: 34 ATP.

1 ketone body creates: 104 ATP,

When we exercise, for every 2.4 lbs. of fat burned 1 liter of deuterium depleted water is created. So in fact, fat is the best fuel.

**“Life is just an electron
looking for a place to rest”**

-Albert Szent-Gyorgi

INTERVIEWER: That’s great! There is one thing that has been bothering me, and that is if Nature likes to take the path of least resistance and conserve energy in the simplest way possible, why is it the Krebs/Szent-Gyorgi cycle is so complicated? Does it have something to do with deuterium?

MITOCHONDRIA: Yes. Indeed. Let’s review! The tricarboxylic acid (TCA) cycle, also known as the Krebs or citric acid cycle, is the main source of energy for cells and an important part of aerobic respiration. The cycle harnesses the available chemical energy of

acetyl coenzyme A (acetyl CoA) into the reducing power of nicotinamide adenine dinucleotide (NADH). There are ten basic steps in the citric acid cycle. Why are there so many steps that make it so difficult? The blame goes again to deuterium.

Let me say it like it is, when the Earth had less deuterium, lifespans and health spans were much longer. Mitochondrial dysfunction has been linked to the diseases of modernity that are devastating our society. The results of studies of deuterium suggest that it may play a central role in mitochondrial dysfunction

For the first time in human history one can make a conscious decision to stop grinding my gears with excess deuterium. You no longer have to be a yak herder in the Himalayas to enjoy a 20% reduction in deuterium levels. Because of commercially available deuterium depleted water you can reduce the deuterium burden on the mitochondria wherever you are and assist the mitochondria to give you a more vibrant life. After all, Mitochondria exemplifies Nature’s primordial definition of synergy, all working together in every cell in the body to perpetuate and optimize life, greater than the sum of its parts.

Take care of them and they will take care of you.

ABOUT VICTOR SAGALOVSKY



Victor Sagalovsky is the cofounder and CEO of [Litewater Scientific](#), the first and only super deuterium-depleted light water, where he has dedicated himself to the research, development, and production of this rare water.

Victor has researched and studied the benefits of deuterium-depleted water

through his theory entitled Endogenous Radiation Damage Theory of Aging. It proposes that our biggest obstacle to longevity is the excess deuterium and other damaging isotopes on the planet and proper mitigation will radically extend our lifespans.

The “Serial Killer” effect, what went wrong?

The line between insanity and reality is dangerously thin

Whether it be from the news or articles plastered over the face of the internet, we all have an ear full of the heinous crimes committed by fellow humans: people seemingly just like us. This aspect further adds to the eeriness of criminals, people we place our trust in with an appearance like our nearby neighbor. They appear so awfully normal to our eyes and though we'd like to say we are nothing like them, the intricate mechanism of their minds often works surprisingly close to ours. We seem to share so many similar traits to these criminals to the point where one question arises: what exactly went wrong?

Delving into the science behind the eyes of a serial killer, it is important to note that things are not so simple as we all hold a powerful weapon inside of us: our mind. Comparably to ours, each brain is capable of actions we hope for ourselves we would never take. The kindest soul is capable of the same level of evil another may have no issue partaking in. Therefore, the

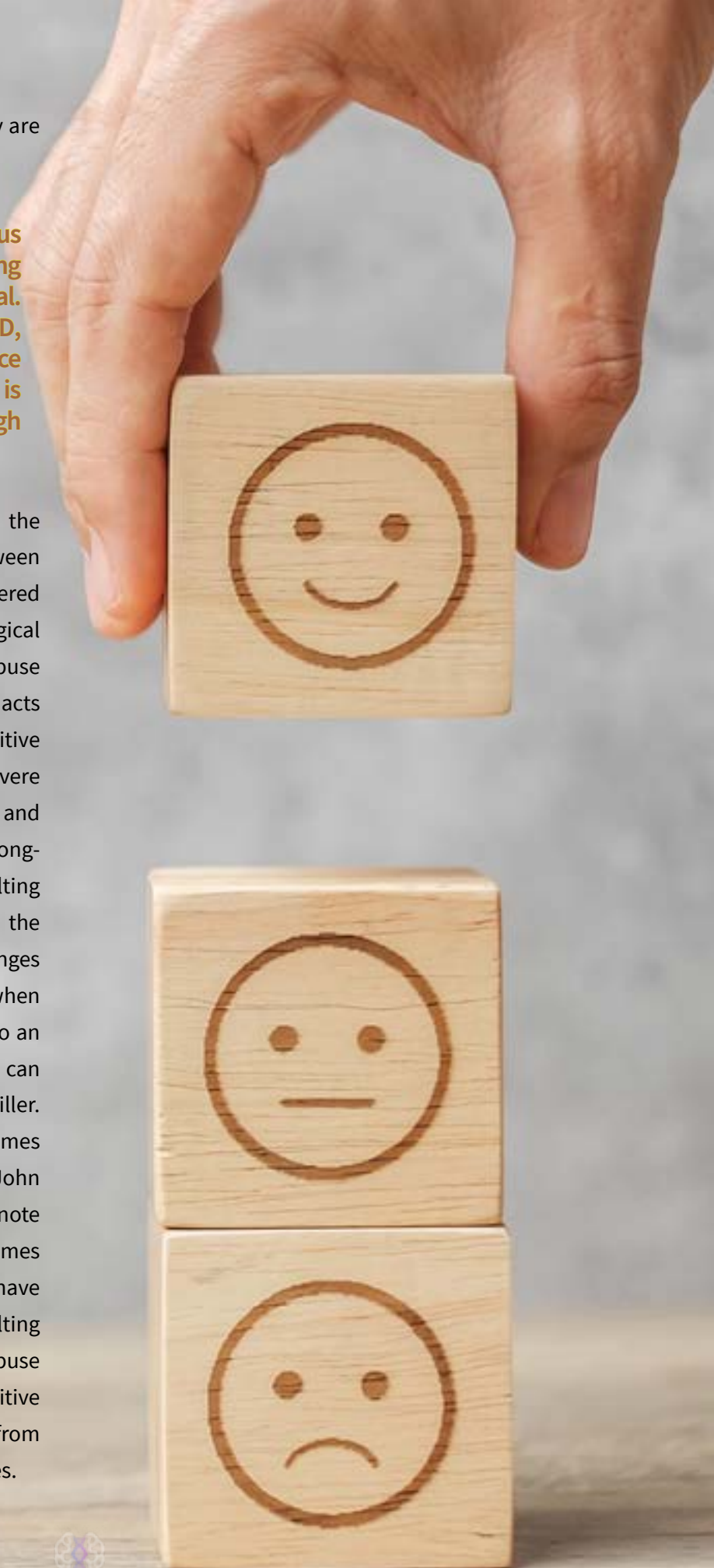
difference lies in the decision, who chooses good and who chooses evil. The line between the former is already blurry as is so what exactly leads to a human being good in accordance to society or evil? Where does darkness begin to arise? Generally, the four main traits that contribute to becoming a killer are trauma, personality, environment and genetics. Psychologists have studied for decades what exactly goes on neurologically for an individual to decide which moral choices they settle on and though there are still holes and new questions that arise for each step forward, we have come a long way in understanding the science behind a deranged brain.

Childhood appears to be one of the leading parts in what pushes an individual to become the person they transform into. This is possibly due to the critical innocence childhood brings to the world, wide-eyed gap-toothed individuals who are in need of the greatest amount of protection. However, due to this fragility, children are exposed to the world of evil

that we have now grown to evolve but that they are bathed in too early on.

‘Trauma upon a child leads to numerous disastrous effects on the wellbeing and emotional state of an individual. Developmental delay, drug use, PTSD, anxiety, depression. As Victoria Aveyard once said “No one is born evil, just like no one is born alone. They become that way, through choice and circumstance.”’

Based off a multitude of American studies the statistics are clear: there is a tough link between abuse and criminal activity with 36% suffered physical abuse, 26% sexual abuse, 50% psychological abuse, 18% neglect and only 32% reported no abuse at all. Trauma to the mind of a young child acts in a sort of destructing power upon the sensitive neurons and matter the brain holds. There are severe hormone level changes such as a rise in cortisol and adrenaline which contain a variety of negative long-term effects such as neuronal damage resulting in limited cognitive capabilities. Furthermore, the immune system is weakened, and epigenetic changes occur. Emotional or physical trauma especially when placed upon the fragile mind of an infant leads to an army of unfavorable outcomes which potentially can lead, in rarer circumstances, to the creation of a killer. Trauma is the single recurring theme when it comes to the study of mass murderers such as Ed Gein, John Wayne Gacy and Ted Bundy. It is important to note that not every child that suffers from trauma becomes a psychotic killer however, most serial killers have suffered from emotional or physical distress resulting in long term trauma. Being aware of the cycle of abuse should encourage every parent to act in a positive manner towards their child and to shield them from the world’s atrocities to the length of their abilities.



Childhood and personality, another contributing factor further have a robust tie. Personality is in fact a multifactorial element that depends on both genetics and environment. The way you are raised has been proven to have a lasting effect on your mind leading to the development of a diversity of personality traits that would not have been exhibited otherwise. A study suggests that personality is set for life by the age of first grade, approximately 7 years old. This is both frightening and impactful as it puts a spotlight on the importance of a healthy childhood and environment.

Genetics is the less controllable factor that plays into the equation as it set in for life since the moment you open your eyes for the first time. When analyzing brain scans from multiple killers and comparing it to the mind of a person, regardless of mental disorders such as antisocial disorder or psychotic patterns, one key element can be observed: low orbital cortex activity. Reduced gray matter is another aspect missing from the brain of many serial killers. Though often, serial killers tend to be slightly above the average via IQ, they lack crucial brain development. Simply explained, the prefrontal cortex which is often highly jeopardized in the minds of serial killer is responsible for most of the emotions that deem us human. It regulates emotions such as empathy, judgement and forethought.

It can clearly be observed that all four factors contributing to creating a killer all seem to delve into each other and all root back to each other. It may serve as awareness

to others that we are in fact, a byproduct of our environment, which is both in and out of our control. What kind of parent you are will ultimately matter and the devastating effects of trauma can rarely but still, ultimately turn deadly. The line between insanity and reality is dangerously thin.

Biohacking comes to show us how to better know ourselves inside and out. And through this knowledge we can learn how best to cope with ourselves and others. The more we know about our inner self, (a subjective approach), the more we can delve into our human nature (an objective approach). It is through this combined dual analysis of the human person, that we come to know who we are, where we came from, what are we doing, and where are we going? In other words, what is our own personal purpose, and what is humanity's purpose. When we continue to peel away the answers to this life long question, with the help of biohacking and good habits, we become one step closer to the mental stability called sanity.

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- *The Cyborggainz Media Team*

The background features a central bright light source that radiates outwards, creating a series of concentric, glowing lines and a sense of depth. The overall color palette is dominated by shades of purple, magenta, and pink, with a gradient that transitions from a darker purple at the top to a lighter, more vibrant pink at the bottom. The radiating lines are thin and numerous, creating a complex, web-like pattern that fills the frame.

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



BEN GREENFIELD

EXCLUSIVE INTERVIEW

*Revered Biohacker,
Physiologist, Fitness Coach,
Podcast Host, Best Selling
Author & Extreme Athlete*

The article below is not a full transcript of Ben's answers, but rather a condensed version for a better reader experience. If you'd like to know all his answers and explanations, please visit his website to listen to the entire podcast episode here.

What's Your Mission Statement?


Well, here's the thing, we're actually doing a full rebrand of Ben Greenfield fitness.com. And as part of that rebrand, there is a mission statement. And I'd like to actually share that mission statement with you so that you might know the direction that my website, my podcast and me as

an individual are heading. I'm going to read this in the third person, which seems kind of narcissistic and I'm fully self-aware.

You ready? All right. In the third person,

"Ben Greenfield is a bold, curious and adventurous soul with a passion for exploring, savoring and celebrating all of God's creation, then sharing with and teaching to the world, the unique new ideas and discoveries."

He unearths through his own personal journey and exploration of both ancient wisdom and modern science. Ben embodies a peculiar blend of hardworking



stoic fitness and healthy Epicurean hedonism. <Laugh> refined intelligence with quirky, casual humor and nerdy geeked out science with mystical spirituality rooted in his strong Christian beliefs, rather than finding, creating, and delivering conventional thoughts and Orthodox approaches to solving problems. Ben instead thinks outside the box and authentically and unapologetically educates and empowers people (that's you) through his rapidly growing platform, how to experience what it truly means to be a complete fulfilled, purposeful, and vibrant human being. Ben has a passion and distinctive talent for learning at a rapid pace and ability to be able to uniquely and effectively teach and disseminate the information he has gathered and a confident, powerful voice combined with an edgy and fierce delivery method that impassions and inspires his followers as a speaker, orator, podcast, author, teacher, mentor, coach, and energetic head turning media personality.

Yep. That sounds narcissistic, but I'm going to stick with it. When Ben finds a new, interesting, compelling, or life changing discovery that he's passionate about his calling in life is to share that with others in a way that positively changes their life too, whether that be some taste bud enchanting recipe, a thrilling new book, a fascinating scientist or great thinker, an intriguing advance in human science, or most importantly, a way of connecting more deeply to God, purpose, love and making maximum impact with one's life on this planet. Because Ben is a supremely curious Renaissance man, constantly driven to discover new ideas and live life to the fullest while exploring every nook and cranny of God's creation, the new Ben Greenfield life ventures far beyond Ben's history of focusing purely on health, fitness, nutrition, biohacking, and hard human science while his current passions and interests in the realms of health and human optimization will remain deep seated for life.

And he'll still be passionate about topics like performance, recovery, fat loss, sleep, cognitive enhancement, biohacking, aesthetics, hormone, balance longevity, and beyond, and still be creating compelling nutritional formulations and functional foods for his supplements company, Kion, and still continue to invest and advise novel and compelling new companies in the health industry, he'll no longer be pigeonholing himself solely into these avenues. Instead, as he grows in maturity and continues to delve into all the other fascinating aspects of life, he finds intriguing he's now branching out into exploring topics like psychology, religion and spirituality, plant medicine, nature, immersion survival, and sustainability family and parenting life hacking economics politics and all the other aspects of living a fulfilled life that he discovers and is passionate about. As Ben expands and grows his platform beyond fitness, he'll continue to gather knowledge via immersion in books, interviews, research conferences, and other forms of education and marry this journey of discovery with compelling and interesting podcast guests outside the domains of pure health and fitness. His stage presence and speaking platform will expand to focus on delivering passionate and inspiring messages that reach beyond the realm of simply looking good or eating well.

Instead blending hardcore inspirational fitness with cutting edge intelligence and deeply inspirational and faith-based spirituality yet Ben's core message and primary audience takeaways from his articles, books, podcasts, interviews, and speeches, whether the content is an interview with a great religious leader about their personal spiritual routine, an article about the latest biohacking technology or a speech on the importance of gratitude, will all still be focused through the lens of a balanced mind, body and spirit health. The two primary avatars Ben is targeting with





his all-encompassing message of boundless energy and a fulfilled life are A), a spiritually minded audience, including the large Christian community who already follows him, who need to learn how to better optimize their health, fitness, and diet while simultaneously caring for God’s great planet, and B) health seekers, biohackers, exercise, enthusiasts, athletes, and adventurers who crave deeper meaning, purpose, fulfillment, and filling of that eternal hole in their soul via creative outlets that go beyond mere fitness and diet along with union with God and even salvation through Christ. Ben’s desire for his life and personal platform is to, with pure integrity and authenticity, write fresh, intelligent, stimulating, and meaningful articles and books full of content that goes beyond health and fitness and delves into true and lasting happiness and fulfillment to become a dynamic, inspiring, fiery and fascinating speaker who can rock stages in both a didactic and motivational manner to feature on his podcast.

He ultimately desires to shout the message of hope and salvation in Christ from the rooftops while retaining a strong and unique flavor of healthy Christian hedonism that encourages his followers to go out and enjoy, savor and celebrate every magical and meaningful aspect of God’s entire creation.

“Knowing that God is most glorified in us when we are most satisfied in him, he desires to mentor and coach others, not only in health, fitness, nutrition, life goals, and business, but also in developing spiritual strength, purpose, passion, love for life, meaning and impact that goes far beyond any physical and mental pursuits.”

Don’t worry. I’m almost done.

Ultimately the new Ben Greenfield life will be a destination for those who like Ben, desire to live life to

the fullest and experience deep meaning, purpose, happiness, fulfillment, and connection, and enjoy every nook and cranny of God's great creation and discover how to achieve full optimization of mind, body, and spirit with boundless energy that equips them to go and conquer every mountain. They've been called to climb along with the supportive community of fellow lovers of life, who like Ben, have a deep desire to make a maximum impact with their life while loving others fully and savoring and enjoying every step of the journey with passionate authenticity and energetic curiosity. So, there you have it, that's my mission statement.



What is your history with Biohacking?

I was home-schooled K through 12 and I was a super-duper intellectual. I loved to study in the library. I dug books probably almost more than people, which might have been a little bit of a personality fault, but no regrets, only gratefulness for the journey that I've been on. But because of my intellectual drive, when I was attending the University of Idaho, where I got my master's degree in Exercise Physiology and Biomechanics, I was always a geek. I was that guy who was fit, but I didn't wear glasses.

You would expect me to have glasses on and a pocket protector. In terms of my intellectual drive, I was pre-med, I took the MCATs, got accepted to a bunch of medical schools. I was considered to be a smarty pants, like a personal trainer who was also very interested in the hardcore human science all through college. I actually trained people and would go every semester to appeal to the Dean to take 30 plus credits. I was working four to five different jobs as a nutritionist, as a personal trainer. I had kids' sports camps. I was just all over the place. But everything was based around deep human science.

I wound up really falling in love with that particular avenue before it was even really recognized as, biohacking per se. When I was a senior at The University of Idaho, I got talked by one of my buddies into body building and entering into like a body building show.

And so, I delved into body building. I managed to really weave together a lot of science to stack about 35 pounds of muscle on what you would consider to be like a lean gainer, skinny physique, and wound up competing in a body building show and actually developed what I would consider to be a pretty good physique at about 3% body fat.

Well, you know, taking all of that knowledge, I then turned and began to compete in what I would consider

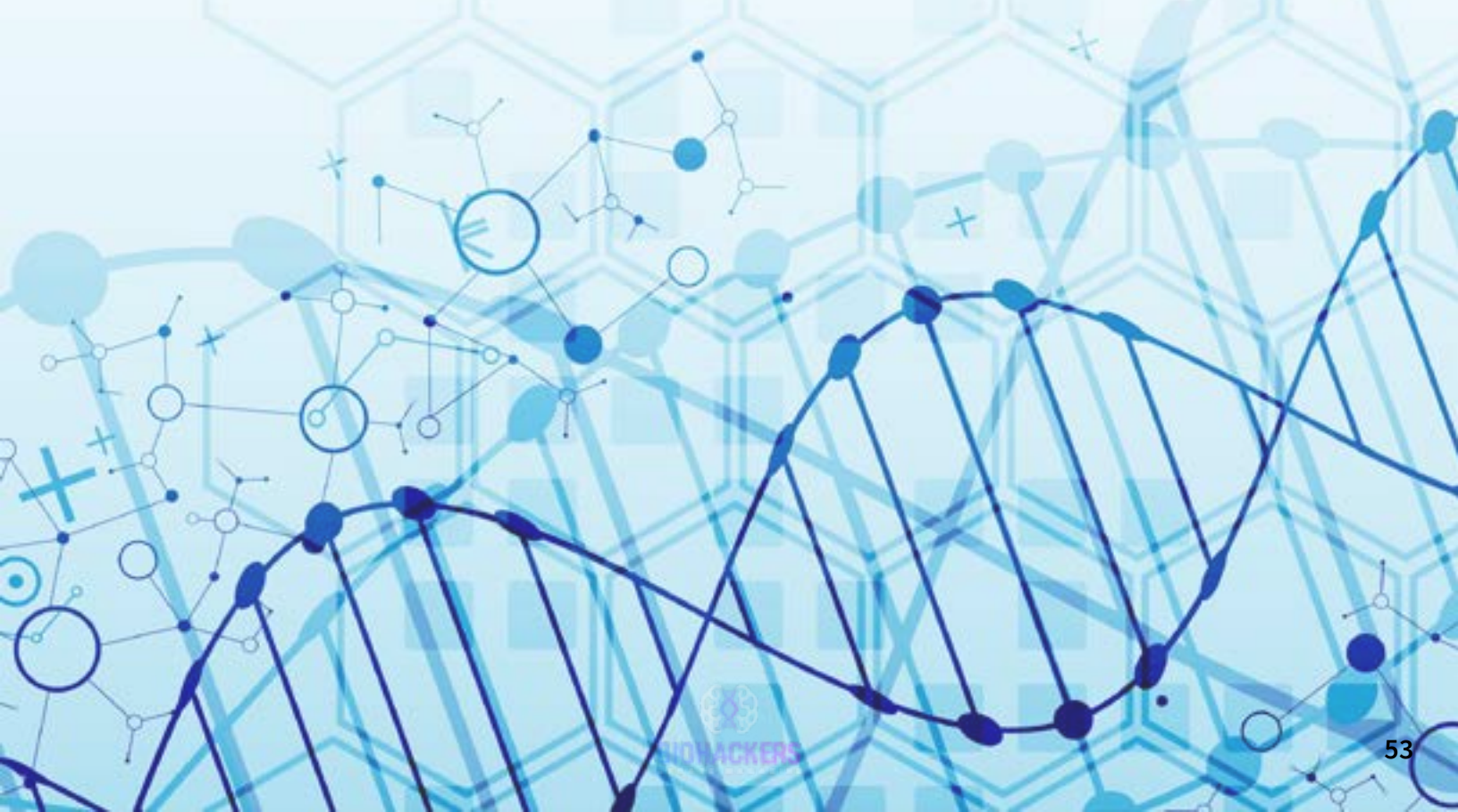
to be another sport that is quite conducive to deep forays into science: triathlon - a sport of swimming, cycling, running, but then also like nutrition and recovery and all the little things that you need, especially at the level of like iron man triathlon to really get a lot out of the body, very similar to body building. I wound up partnering with a local physician and we launched a one stop shop for sports medicine, where I served as the sports medicine or the sports performance director.

We had like old school PRP machines to take out people's blood and spin it and inject it back into joints. We had a chiro on staff, massage therapist, physical therapist, sports medicine docs. And I loved it. I would just geek out on science all day long, turn around and use that science to train the people that I was working with. I wound up really learning a lot. That was about the time I started a podcast as well.

Now, once the realm of self-quantification began to emerge: - idea that you could go and get blood tests and IVA tests and stool tests, to find out yeast and

parasites and fungus, analyze and find out testosterone and thyroid hormones from blood and even do genetic analysis and salivary analysis - I just began to take a real interest in self quantification and tested my body. Every single new test that came up, I would order it, or I would get a doctor to order it for me. I would sit there, I'd watch tons of videos and dive into research and interview scientists about to how to interpret the results. I began to run the same type of tests on my clients and share with them what I'd seen on their lab results.

I love to coach. And I love to learn, teach and compete. And I love to feed a lot of what I learned about everything from technology and tools and toys and supplements and nutritional adjustments into that whole career. And obviously biohacking has become quite popular and more accessible to many people of late. But for me, it just began with my keen interest and the intellectual aspects of human science combined with time in the trenches spent performing for myself and with others. And so that's kind of my history with biohacking. That's a great question.





What is your approach to healing and how is it different from a traditional approach?

By traditional, I'm assuming that the question is referring to a modern band aid-like disease or health issue with a pharmaceutical or a surgery, or an overpriced implant or something like that. Well, I possibly overuse this phrase sometimes, but it's kind of a blending of what I would deem ancient wisdom with modern science. And I'll give you a few examples. There's a guy interviewed named Sayer Ji wrote a great book called Regenerate and this is just one example of a few that I'll share of my take on healing.

Now, Regenerate is a book that kind of gets into the body's own capacity to be able to heal and recover when placed in the right healing environment, both emotionally and physically. So a few things that I really focus upon:

“First of all there is an enormous importance in terms of the gut, the gut microbiome and the overall health of the gastrointestinal tract when it comes to the gut brain access and the immune system and the multitude of effects that a healthy or an unhealthy gut has on the capacity of the human body to heal and recover. I've personally struggled with gut issues nearly my entire life, and it's a pain in the ass, literally and figuratively, but as a result of kind of having to solve my own issues, I feel like it's a blessing to have become a real expert in digestive health and share it with many of my clients.”

This whole like microbiome era medicine is something that I think is really important when it comes to healing.

Another component would be the idea that your genes are not your destiny. There's this idea of epigenetics and our DNA's response to the environment. So when you're getting salivary tests or you're finding out what

your risks might be, remember that your genes are simply indicating that you might be holding a stick of dynamite that predisposes you to something like colon cancer or type two diabetes or something like that, but that empowers you to be able to tweak and adjust everything from your nutrition to your supplementation, to your exercise, - to be able to make customized changes to what you're doing based on your DNA. So I take DNA and the customization of someone's exercise plan and nutrition plan into account when it comes to healing.

The next thing that I think about quite a bit is Water. A lot of people really don't focus on the fact that roughly two thirds of the human body is made up of water and water has been thought of in the past as some type of mechanical interface. But we know, primarily based on the research of fellows like Dr. Gerald Pollack, who's been a previous podcast guest of mine, that the capabilities of water and the consideration of water in

terms of the importance of healing is profound. There's this idea of a fourth phase of water. And so, I'm very into everything from harnessing biophotons of light to drinking water that is clean and pure and mineral enhanced and structured.

And that would be another component that I, that I really focus on that might be a little bit unique. I am also very much into marrying the neurobiology and intelligence of plants into healing the body, whether that would be plant-based medicines or a wide variety of plants and herbs and spices. As you probably know, most of our pharmaceuticals are really derived from plant matter. And I am convinced that we as a human species have barely even tapped into the enormous healing potential of the wide variety of created plant matter that's arounds us. And I'm constantly looking into how plants show memory and learning and adaptation, and a lot of other traits that can be harnessed to help, to heal us. Its like sunlight and photo biomodulation and the use of red light.





And then the fact that the human body is a battery, as you can read about in books, *Healing is Voltage* by Jerry Tennant or Robert Becker's book, *The Body Electric*, I'm constantly looking at the human body as a battery and how water and electrolytes and earthing and grounding and sunlight and heat and cold, and the like, help to charge up that battery.

I'm not a physician. I don't want any of this to be misconstrued as medical advice, but people ask me for example, about something like cancer and I'll of course give them many resources, like the MOSS reports website which has a host of comprehensive downloadable reports on alternative remedies for a wide variety of cancers. There are books written by a doctor named Nasha Winters, Dr. Thomas Seyfried, and Dr. Thomas Cowan, I found to be incredibly helpful when it comes to tackling cancer books. There's the care oncology website, which weaves together stacks of pharmaceuticals that are used for purposes that they might not have originally been intended for, but that when stacked together can have a profound impact on halting the development of cancer, helping the bodies to do better with something like chemotherapy.

And then people ask me, "what would I do if, if I wanted to tackle cancer from an alternative health standpoint or using my type of approach?" Well, it would be everything from daily frequent consumption of hydrogen, rich water, and deuterium-depleted water and hypertonic water solutions to the use of plants and mushrooms, specific medicinal properties that are anticarcinogenic like chaga or many of the things that I've talked about with Dr. Thomas Cowan.

And they have a lot of these like machines and PMF, etc. Hyperbaric Oxygen would be another example. Infrared sauna would be another example, Elimination of non-native EMF, like Wi-Fi and Bluetooth and significant smartphone usage would be others. High



dose T-cell therapy in places like Mexico is another. Speaking with Dr. Matthew Cook about things like emotional detoxification focused on gratitude and prayer and meditation and relationships and distressing, and many other strategies. Dr. Dale Bredesen talks about in his comprehensive book *The End of Alzheimer's*, stacking multiple modalities from fish oil to ketogenic diets, to infrared light for the head and all sorts of things for Alzheimer's or dementia.

I tend to, when I look at healing, not just pick one thing, but I'll stack a lot of modalities when it comes to everything from joint pain to cancer, to Alzheimer's, dementia, you name it. And again, I'm not doctor, I just pass on advice to people about these type of things. And, and then, you know, the, the other thing to take into consideration is of course, you know, books like Bruce Lipton's *The Biology of Belief*, or even the books like Joseph Murphy's *The Power of Your Subconscious Mind*, discuss the importance of affirmations that are very similar to Dr. Dawson Church books, *EcoMeditation*, all based around directing your mind to heal your body.

Joseph Murphy even has a wonderful meditation for healing principles. In his book, there's one meditation that I really like that you just repeat every day when you're in meditation or with your eyes closed. And it says: "I will restore health under thee, and I will heal thee of the wounds says the Lord, the God in me has limitless possibility. I know that all things are possible with God. I believe this and accept this wholeheartedly. Now I know that the God power in me makes darkness light and crooked things straight. I am now lifted up in consciousness by contemplating that God dwells in me. I speak the word now for the healing

of mind, body and affairs. I know this principle within me, response to my faith and trust the father does the works. I'm now in touch with life love, truth, and beauty within me, I, myself, with the intimate principle of love and life within me, I know that harmony health and peace are being expressed in my body as I live, move and act in the assumption of my perfect health. It becomes actual, I now imagine and seal the reality of my perfect body. I'm filled with a sense of peace and wellbeing. Thank you, father."

Those are examples of affirmations, healing affirmations that you find in a book like Joseph Murphy's, *The Power of Your Subconscious Mind*. So, when you weave all this together, I guess ultimately I'm a fan of the idea that the body is able to self-heal when placed in the right environment and when considered as just like a giant battery that can be electrochemically charged. I'm a big fan of stacking multiple modalities, and I'm a big fan of the emotion behind healing.

What is your Favorite Quote and Why?

I would say that my favorite quote, and this is the same quote that's lazed on a coffee mug that I drink from every morning is probably the

one by Theodore Roosevelt, the man in the arena. And, you know, many of you might be familiar with this inspirational and passionate message that he delivered. It goes like this: "It is not the critic who counts, not the man who points out how the strong man stumbles or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood who strives valiantly, who errs, who comes short again and again, because there is no effort without error and shortcoming, but who does actually strive to do the deeds, who knows great enthusiasms, the great devotions who spends himself in a worthy cause who at the best knows in the end, the triumph of high achievement and who at the worst, if he fails at least fails while daring greatly so that his place shall never be with those cold and timid souls who neither know victory nor defeat." I suppose, if he had a microphone, he would've dropped it right then, but I find this quote to be just enormously inspirational.

And it, it just reminds me constantly to push myself and to dare and to not be afraid of failure and to just get in the trenches. And then again, Mar my own face with dust and sweat and blood and strive valiantly, and spend time engaged in worthy

causes, knowing the triumph of high achievement.


What is your favorite book?

Well, my favorite book is the Bible, but I guess it's just because the Bible is a given. It's like the question: who would you want to have at this dinner table with you right now? I would probably say God, but that's kind of a given.

So anyways here the three books that I think would be my favorite books, because I couldn't just pick one. For the category of Fiction, it would absolutely be *The Lord of the Rings* by J.R.R. Tolkien. I don't really think I need to say much more aside from the fact that I've read the entire series seven times. It's just still the original OG fantasy fiction fairytale of all time.

The second would be *Poor Charlie's Almanac*. So, you know Ben Franklin back in the 1700's dispensed a whole bunch of useful and timeless advice through what he called *Poor Richards Almanac*, extolling virtues like thrift and duty and hard work and simplicity. And then two centuries later, I think a very similar title came out called *Poor Charlie's Almanac* written by Charlie Munger, Warren Buffet's business partner.

It's all the wit and wisdom of this guy, but a great insight like Robert Green's *Laws of Power* into human rational



and irrational decision making. It was formative for me in terms of my understanding of people and how they operate.

The third book is *Stillness is the Key* by Ryan Holiday. You may be familiar with Ryan, kind of a modern-day author/philosopher. It just goes into the one quality that great leaders and makers and artists and fighters have shared through all of time that this idea of inner peace, or as Ryan called it, stillness, the ability to be steady and focused and calm in a constantly busy world.

If you could tell someone a simple method or element that they could add to their life that would change them for the better, what would it be and why?

Well, I've of course recorded in the past about my own family's habit of our morning and evening meditation practice. We start by answering the question in the morning, what am I grateful for and who can I pray for or help or serve this day? Then we meditate as we're doing that. So we have about a five to ten minute meditation in the morning. We do the same in the evening, five to ten minutes replaying our entire day, like a movie in our mind in a process of what's called self-examination where we're asking ourselves, what good have I done this day? What could I have done better this day? And where was I most purpose-filled on this day? And the fruits of that daily practice have just shown forth in myself and my wife and in my sons. And it's just an indispensable habit that we do every single day. However, I also have a habit that I've adopted recently that I have never talked about before on the podcast, because it's new for me and it I've been doing it for eight solid days and getting up early in the morning, carving out time to make this happen.

And it has been absolutely transformative. It has given



me peace and love and joy and, and a newfound energy that just stays with me through the entire day just by doing it 45 to 60 minutes in the morning. All right, I'll quit selling it. So it was introduced to me by a dear friend who just absolutely radiates the love and peace and joy of the holy spirit and is a wonderful Christian man. And he told me that when his wife went through an autoimmune condition, a couple of years ago, he began to get on his knees and pray every morning. And that transformed into 30 to 60 minutes every morning, either walking or on his knees or sitting in a special chair or a meditation room, basically just talking to God and listening to God in deep prayer along with occasionally like song and breath work and things along those lines for 30 to 60 minutes.

So I've been doing that for 30 to 60 minutes every morning – deep time where I'll play some really uplifting musical tracks, like the hill song worship station. And then just start talking to God, pouring out my heart to God, asking what God would show to me that day, asking God to give me wisdom and discernment to make the right choices for the day,

asking for peace that I would be able to be peaceful through times of stress for the day, asking for power and strength or anything from my workouts to leading my family, to recording a podcast for you. And it's just been absolutely transformative and well worth the slight shorting of sleep that has occurred as a result (because I always take a little afternoon snooze afternoon nap anyways).

And no, you do not need to be a Christian to do this. God exists and is listening to you and is watching you and is hearing you and cares about you, whether you are a Christian or not. Okay. So that's not what this is about.

“It doesn't matter who you are or what your history of religion is. There is a God, and you will hear him if you make a concerted effort to just go out in the still small silence and listen, and then also to speak and ask to be spoken to.”

Take us through a typical day and what habits you always try to stick to.

Let me tell you a few of the Indispensables.

When getting up in the morning, I really love an Ayurvedic practice in the morning. This would mean everything from splashing the face with warm water, transitioning to cold water, tongue scraping, coconut oil pulling, dry skin brushing, jumping up and down on a trampoline, watching the sunrise, doing specific movements like Tibetan longevity exercises or twists or rotations. I'm typically just waking up my body for the first 20 minutes of my day. Another would be that after I have done all of that, I have that time with God early in the morning.

And then another indispensable for me is every morning I do red light therapy. I strip off all my clothes. I go in my office and I just bathe myself in red light. And I feel like a million bucks when I do it. I put on an infrared light helmet called a V light, which was developed for Alzheimer's and dementia, and is also amazing just for acting like a cup of coffee for your entire brain. And I spend that time sipping a cup of coffee or mushroom tea or some other hot beverage.

Then I'll just kind of check in on the team for the first 20 to 30 minutes of the day, because I like to have a clear head before I launch into my deep work for the day and make sure there's no fires to be put out. So, then I dive into my deep work and I do that while I'm doing the red light and then drinking my coffee.

Another indispensable for me, is that I'm doing some element of heat and some element of cold, either in the sauna in the morning, in the evening, followed by a cold plunge, or I'm doing a workout that gets me hot and sweaty. I don't like to use AC. It doesn't have to be a sauna, but I get nice and hot. And then typically two to three times a day, I'm always jumping in a cold body of water or taking a cold shower. And I utilize heat and cold nearly every single day of the year.

Another indispensable for me would be an afternoon siesta, which I've already alluded to every day. I



don't spend a ton of time eating lunch. I instead get through lunch and then use that lunchtime to nap. If I'm traveling sometimes, I'll take out a sleep mask that I keep in my bag and find a nice tree outside or lay under or a desk and take a 20-to-40-minute nap. And I just go deep into either a trance-like state or a dream state or a sleep state. And there's a lot of evidence that shows even something as short as a 20-to-30-minute nap can simulate a 90-minute sleep cycle. So that would be another indispensable, the afternoon app.

Every day use the entire suite of [Kion products](#), because I created all those to scratch my own itch. So, you know, smoothie has the Kion creatine, the Kion colostrum and Kion aminos in it. I use Kion aminos pre or post workout. And before bed I make a nighttime sleep gelatin.

I take the Keion immune every single day, especially when I'm traveling or that my immune system needs support. I pretty much use all the products that I create

every day. And they're amazing. My goal is to just basically create every supplement that I personally use and find benefit from my daily life but make the best version of that in the world.

I work out for 30 to 40 minutes a day, typically kettle bells or full body, a high intensity interval training, just some type of a full body workout, bike ride around town or whatever. But I push myself, I push myself pretty good for 30 to 40 minutes a day.

I move all the time throughout the day. I have a standing workstation and standing treadmill desk. So, I find if I'm moving all day long and just doing stuff all day long, I can get by just fine from a health standpoint, on top of the daily workouts. But I'm very consistent. That's six days a week, 52 weeks of the year.

“And then I would say another indispensable would be our family dinners and family nights. We do family dinners and family game nights pretty much every night of the week. One of my best investments is I take my sons to Barnes and Noble typically once a month and I spend 25 bucks on a brand-new game and we go home and just play the hell out of that game for the next month. And it's about half the cost of taking the family to a movie once.”



And we just play and have these amazing, glorious family dinners play games. Then we go upstairs, do our meditation, play some songs, read a story and go to bed.

I'll give you one more for a nighttime shutdown routine. What I do is I, I have these Ooler chili pads that circulate 55-degree cold water underneath my mattress. So I have that. And then I also have, what's called a bio balance mat made by Dr. William. I flip that onto sleep mode for 12 hours. Typically, I will cover up any background noise and ambient noise from the road or whatever, with an app that I use called sleep stream. So I put sleep stream on, and that plays just white noise into the room, or technically it's pink noise. Pink noise is better for sleep than white noise. And so, I put that on, I kind of play that in the background. I got my eye mask on, so I'm kind of shut off to the world. And then I go to sleep. of late. I've also found that applying lavender oil to the soles of my feet and my chest, and a little bit underneath my upper lip has also been quite helpful for drifting off into a relaxing state.

What advice do you have for a pandemic-stricken world?

People still ask me: are you getting a vaccinated? - and I'm still deep in research mode. I've got two more guests coming on to talk about this topic.

This point is I'm not comfortable getting vaccinated,



but that's just me. And I'm a very open-minded guy when it comes to all this stuff. And I just don't feel like I have enough information yet to make as important a decision as putting something into my body like that. I know there's those of you, people who hear me say that and tell me, "Ben, you injected stem cells into yourself, what are you afraid of?" But I researched that to tell you the truth. They're stem cells, they're my own stem cells injected into my own body of my own volition.

I would say the advice that I have for a pandemic-stricken world would be inspired by an author who has also been a recent podcast guest of mine, Charles Eisenstein. And he's been writing just a wonderful series of an observation of the times that we are in. Basically, he gets into in this essay about how one of the worst things that we can do is scapegoat the other side, no matter what side of this entire debate that we are on, to really be so tied to our beliefs, that we become close minded in one way or another. For example, the Pro-vax cause and the Anti-vax cause. And if you ever find yourself putting hate or divisiveness in service of that, then that might be a suggestion as Charles alludes to in his podcast, that your primary allegiance to your cause is just winning, is just being right.

And that's not the type of person that I want to be.

"I want to be the type of person who listens to others who loves others, who has both empathy and sympathy for others, and who acknowledges the fact that we are interdependent humans on this planet."

And at some point, the tones of black and white and good and evil, that's a risky road to travel down. Don't



get me wrong. I believe in absolute truth. And I do believe in the existence of good and the existence of evil. But I think that sometimes we think in terms that paint the other side as a scapegoat, that we become too close minded, we spread a lot of negative energy, and we really do not cover everything with peace and love and forgiveness, and assuming the best, assuming the best about other people. I'm not saying they're acting the best, but I'm saying that that should be the initial assumption. And if they prove otherwise, then the fruits of their actions will show that. But I think that leading with trust and love and forgiveness towards your fellow human being, especially in the times that we are in is a far, far better strategy than scapegoating, or then trying to simply be right for the sake of egotistical winning for your side, no matter what side you are on.

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BEYOND INDUSTRIAL MEDICINE

Let's say I'm addicted to prescription pain-killers. You are my concerned friend. "Charles," you say, "you've really got to get off this medication. It's ruining your health, and someday you're likely to OD."

"But I can't stop taking it. I'm in pain all the time. If I don't take it I can't function at all. I have terrible back pain, and my doctor says there is nothing I can do about it."

If you accept the premises of my response, you'll have little to say. If we both accept that there is no other way to reduce the pain, and that the cause of the pain is incurable, then I'm right, I have to keep taking the painkiller.

Now let's talk about glyphosate, the much-maligned herbicide that Monsanto markets as Roundup. Critics make compelling points about its effects on human and ecological health. Defenders rebut those points, at least to the satisfaction of regulators. The debate

has raged now for decades. One point that Roundup's defenders make is this: "Look, Roundup is the most effective broad-spectrum herbicide we have. If we stop using it, crop yields would fall. We would have to use other, less effective herbicides that might be even more toxic to human beings and the environment. Roundup is the safest, most economical option available."

Here again, if we accept these premises, we are nine-tenths of the way to conceding the argument. By limiting the debate to Roundup itself, its relative harms and benefits, we implicitly accept as a given the entire system of agriculture of which Roundup is a part. If we take for granted an industrial system of monocrop agriculture, then Roundup's defenders may be correct. We need Roundup, or something like it, to run the current system. If we don't change it, then banning Roundup will just result in a switch to other herbicides: new chemicals or genetic technologies that will have their own dangerous side-effects.

Most critics of glyphosate are not motivated by the desire to replace it with another herbicide. Rather, glyphosate is a focal point for a critique of the entire system of industrial agriculture. If we had a system of small-scale, organic, regenerative, ecological, diversified, local agriculture, glyphosate would not be much of an issue, because it would hardly be necessary. As I amply document in my Climate book, this form of agriculture can outperform industrial agriculture in terms of yield per unit of land (although it requires more labor—more gardeners, more small farmers).

So do we need to keep glyphosate or not? If we take the current system of agriculture for granted, then maybe yes. The conversation we need to be having is about the system itself. If we ignore that, then the glyphosate debate is a distraction. One might still oppose it on technical grounds, but the most powerful critique is not of the chemical itself, but of the system that requires it. The good folks at Monsanto probably take the system for granted, and cannot understand how their diligent efforts to make it work a little better are so misunderstood by environmentalists who cast them as villains.

The same pattern applies to what is called “mental health.” Thirteen years ago I wrote an essay, *Mutiny of the Soul*, which described various mental conditions like depression and anxiety as forms of rebellion against an insane world. By calling those conditions illnesses and treating them with psychiatric medications, we suppress the rebellion and adjust the individual to fit society as it is.

If we accept society-as-it-is as right and good, then of course a maladjusted individual is a sick individual. If we also take as normal (or fail to see) conditions that make people unhappy, such as social isolation, unresolved trauma, the standard American diet, nature deficit, physical inactivity, or racial, economic, or other forms of oppression, then again we have

little alternative but to adjust the individual. And if we exclude from consideration non-pharmacological forms of “adjustment,”¹ then we are left with drugs like SSRIs. Therefore, those who condemned the article and its sequel were perfectly correct within their frame of reference. “These drugs, while perhaps overused, are powerful and necessary interventions that have rescued many people from depression and allowed them to live normal lives.” Leaving aside studies in which these drugs fail to outperform placebo, if we hold all other variables constant, one could reasonably argue that they are a beneficial technology, just as glyphosate is in the context of industrial agriculture.²

In a similar vein, those who accept the basic goodness, rightness, or inalterability of the current system will see its critics as psychologically infirm. Quite a few people have, with the kindest of intentions and often quite gently, questioned me about whether my skepticism of vaccines and mainstream medical system merely plays out unresolved childhood wounds around authority. Am I rebelling against real injustice, or is medical authority a proxy for my father (who wouldn’t let me stay up past my bedtime to watch “All in the Family,” the old tyrant). I might be suffering from Oppositional Defiant Disorder. To those who accept medical authority as basically good and right, it seems reasonable that my suspicion of it must come from some kind of psychopathology.

The examples of glyphosate and SSRIs illustrate how perfectly decent people can participate in harm simply through their acceptance of the systems and realities that immerse them. Malice is a poor explanation.³ This is one of the insights that launched my writing career. I spent fifteen years holding a single question in my mind: What is the origin of the wrongness? I found the aforementioned systems and realities to be products of ideologies so deeply woven into the fabric of civilization as to be nearly inseparable from it. Did some evil genius concoct the concept of the discrete, separate

self marooned in an arbitrary universe of force, mass, atoms, and void? No, that mythology evolved organically, reaching its culmination in our time. It is in fact over-ripe, yet the fruit—the systems we inhabit and that inhabit us—has yet to fall from the tree. When it does it will split open and the seed of a new kind of civilization will grow.

Okay, Covid vaccines. We could argue about their relative harms and benefits, but again by thus narrowing the conversation we take for granted the system in which they naturally fit. Full disclosure: my personal opinion is that, even holding other variables constant, the risks and harms far outweigh the benefits. Last time I said that in an essay I got a lot of flak for not “documenting that claim,” even though I said it was an opinion and not a claim. I’m not going to claim it now either, nor try to document it, (1) because many of the sources I would use are unacceptable to most of the people who disagree with me, and I would have to unfold a complex discussion of systemic bias in the information environment; (2) because my opinion draws heavily from practitioners in my circles who are seeing damage first-hand, and I

can’t cite them using publicly available documents; (3) most importantly, because right now I want to broaden the conversation to the system of industrial medicine, which bears close resemblance in many dimensions to the system of industrial agriculture. Also, since I’m not making false “claims,” the scrupulously logical social media censors won’t be able to take this essay down. Ha! Pwned!⁴

If we accept as a given the current state of public health along with reigning paradigms of modern medicine, then the case for vaccination is at least arguable, just as is the case for glyphosate in the context of industrial agriculture.⁵ We could debate about relative harms, study designs, suppression of information by corporate interests, unlabeled ingredients, underreporting to VAERS, and so on, but in engaging that particular debate, both sides implicitly agree not to talk about what lies outside its boundaries.

What lies outside the debate about vaccine safety? Effective natural and alternative treatments for Covid. Superiority of natural immunity to vaccine-induced immunity. The “terrain” of infection: why some people experience serious illness and death, and others do not. The positive role viruses, even pathogenic ones, play in health and evolution. The decline of virulence over time. The sociological implications of handing body sovereignty over to government authorities.

Basically, vaccines are a way to keep society-as-we-know it functioning as usual. The idea is, “Everybody get the jab and we can go back to normal.” It is much like psychiatric medications. Taking for granted a society that makes vast numbers of people miserable, maybe we need those drugs to keep them happy, or at least functioning. They can get back to normal—the life defined by society’s norms. Yet that life is what may have made them miserable to begin with. Similarly, what we have known as normal includes the conditions that result in needing (arguably, anyway) the jab in the first place.





Normal has been a society where autoimmunity, addiction, diabetes, obesity,⁶ and other chronic conditions are at epidemic levels. This epidemic is actually quite new. In the 1950s, the prevalence of diabetes in the United States was a tenth what it is today. Obesity was a third. Autoimmune diseases were medical rarities. As most Covid deaths are in people with diabetes and other chronic conditions, the whole context of vaccine policy includes conditions that are historically aberrant.

Normal has been the disempowerment of people to maintain their own health themselves and in community, making them dependent instead on experts to do things to them. The “patient” is passive, patiently enduring what the expert doctor does to her.

Normal has been a ubiquitous death phobia that worships at the altar of safety and would sacrifice anything for the promise of security, even at the cost of civil liberties, personal freedom, and community self-determination.

Normal has been the marginalization of holistic and natural healing modalities that offer effective

treatments for Covid and most other conditions. Oops, that sentence will get this flagged as misinformation. Where’s the data, Charles? Well that is part of the problem. Society has not devoted the vast resources into researching and developing herbal, nutritional, vibrational, and other unorthodox therapies that it has into pharmaceutical ones. They don’t fit the funding system and they don’t fit the paradigm. So, evidence at the level of multiple large-scale double-blinded placebo-controlled trials is scarce. Moreover, since many alternative therapies depend on unique relationships between therapist and patient, individualized treatments, or active work by the person being healed, they are inherently unsuitable for standardized trials. Standardized trials that produce the aforementioned “data” require the control of variables. They are part of what I’ve been calling industrial medicine—“industrial” is all about standardization, control, quantification, and scale.

That is not to say that alternative and holistic treatments for Covid or any other disease lack evidence. Far from it. But, to access their full power one must venture into

realms beyond industrial paradigms and proofs.

I'd like to imagine, then, a different normal. It departs from industry's dream to remake the earth, life, and the human being in its image. It is the normality of the age of ecology, the age of relationship, the age of community, the age of reunion.

In that future, it is normal to see health as a matter of good relationships within the body and outside it. Society redeploys the hundreds of billions it spends on sick care toward understanding and restoring these relationships. Every conceivable holistic, herbal, homeopathic, nutritional, energetic, etc. therapy is pursued, tried, tested, improved, and if effective, made available.

In that future, it also becomes normal to take responsibility for our own health and to receive support in doing that (because personal willpower is not enough, we are social beings and need support). The support is economic, legal, and infrastructural.

I asked my wife Stella, an extremely effective healer, what she thinks healthcare could become. She said, "We recognize mind and body as a continuum. We don't see illness as a random misfortune. We know that resonant attention and the holding of space for emergent wholeness can heal, and that anyone can do this. We can return medicine to the people." I see Stella help people heal from real medical conditions nearly every day. Sometimes they are conditions doctors say are incurable. The power of these techniques (and so many others in the alternative world) is real, and they can be taught, and a new normal could be built on them.

Yes, we can return medicine to the people. The power to heal ourselves and each other has, like so much of modern life, been professionalized, turned into yet another set of goods and services. We can reclaim that power. The future of medicine is not high-tech. Technology has its place (for example in emergency medicine), but it has usurped the place of other powers:



the hand, the herb, the mind, the water, the soil, the sound, and the light. Can we imagine a healthcare system that fulfilled the promise of the medical alternatives that have touched millions of lives in the shadow of the conventional system? These alternatives should stop being alternative. Come on people, these actually work. They have gained momentum over the last half-century despite ridicule, marginalization, lack of funding, and persecution from mainstream institutions. They work. Let's take them seriously. We know how to be healthy. We remake society around that knowledge.

No authority during Covid has said, "People are sick, they need more time outdoors. People are sick, they need more touch. People are sick, they need healthy gut flora. People are sick, they need pure water. People are sick, they need less electromagnetic pollution. People are sick, they need less chemicals in food. People are sick, let's put diabetes warnings on soda pop. People are sick, let's encourage them to meditate and pray more. People are sick, let's get them in the garden. People are sick, let's make our cities walkable. People are sick, let's clean the air. People are sick, let's provide free mold remediation on all dwellings. People are sick, let's promote education about local herbs.

People are sick, let's make the best supplements and practices of the biohackers and health gurus available to all. People are sick, let's heal our agricultural soils." None of these are as hard as keeping every human being six feet apart from every other. So let's do these things. Let's remake society in their image with as much zeal as we remade society in the year of Covid.

Am I saying not to talk about vaccines and focus only the bigger picture? No. Vaccines, their dangers, their shortcomings, and the measures needed to coerce the unwilling are the visible tip of an iceberg, showing us starkly the system they represent. They are a window into a future of technological dependency where we put into our bodies whatever the authorities tell us to, and wonder why the promise of health, freedom, and a return to "normal" is always on the horizon but never here.

Another future beckons. It won't be handed to us by the same authorities and systems that rule today; we have to claim it. We claim it through the choices it offers. Which future does your next step lead toward? Toward more normalization of the world under control? Or toward the new normal I've described? The road has forked. It is time to choose.

ABOUT CHARLES EISENSTEIN



Charles Eisenstein is an essayist, speaker, and the author of several books including *The More Beautiful World our Hearts Know is Possible*. His most recent work may be found on <https://charleseisenstein.substack.com>.



biohacking
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FIVE WAYS YOU CAN BIOHACK YOUR BRAIN AND MIND ON A BUDGET.

In this article, I will discuss the five ways you can biohack your brain and mind on a budget. You may think that biohacking requires a lot of money, but it doesn't! You only need time and determination to make your life better.

I am Renato, a biohacker and host at the Superyouman podcast, where I interview the best doctors and scientists about performance enhancement and biohacks.

Today, I will share some of my key learnings regarding biohacking my brain on a budget. Although I am not a doctor, I think you might find the following points very interesting. These steps transformed me from a Human into a Superyouman (which, not coincidentally, is also the name of my podcast ;)). Enough of the intro, and

let's start with some practical stuff.

How to Increase Neurogenesis and Neuroplasticity

Neuroplasticity is the natural ability of our brain to change and reorganise itself based on new experiences. When we are able to both generate new neurons – known as neurogenesis

–and create new connections between these neurons, we are maximising neuroplasticity. Many people assume that the best way to increase their neurogenesis or neuroplasticity is

by challenging themselves mentally, like with puzzles. Even though this is an effective method, it isn't the only one. Physical activity also significantly impacts your ability to grow new cells in your brain! Your physical

fitness level can profoundly affect your brain health, so it's essential to consider both when working out. If you want to maximise neurogenesis and neuroplasticity in your body, consider both mental and physical stimulation when you are active.

In my interview with neuroscientist Kayla Osterhoff, we learned the importance of growth factors that can be increased with exercise, in particular aerobic exercise. She also outlined the importance of building blocks such as choline and folate, and the importance of reducing negative stress (e.g., sleep deprivation) while increasing positive stress such as cold thermogenesis. You can find out more about how to hack your mind and brain from this episode which I recorded with Dr. Osterhoff a few months ago:

<https://open.spotify.com/episode/onYFOTgzioZ3xI5012tItx>

Hack Your Dopamine for Better Motivation

One of the best ways to hack your brain is by taking care of the the brain's dopamine balance. Dopamine is a neurotransmitter that regulates the brain's pleasure and reward system. It also affects your mood, attention, learning, and movement. There are many ways you can increase dopamine levels in your brain. One of the most popular methods is taking supplements like L-phenylalanine or L-tyrosine, or eating protein-rich foods such as beef or turkey. You can also naturally produce more dopamine by exercising regularly, or doing cold plunges.

“It's important to note that there is a “sweet spot” for dopamine: Too little and you may struggle with low motivation, fatigue, depression, and poor working memory ; too much and you may increase risk for addictions, poor impulse control, and inability to relax or sleep.”



My hacks to get adequate dopamine levels are cold baths and supplementing with Mucuna Pruriens, which is rich in L-Dopa, a dopamine precursor. However, I personally advise to use dopaminergic supplements only when an extra boost is needed, such as after sleep deprivation or when stressed, as overdoing supplements might be equally detrimental for

optimal brain performance. If you want to dive deep into how you can hack dopamine for better motivation and satisfaction, I recommend you listen to the fantastic episode by the neuroscientist Dr. Andrew Huberman in his podcast The Huberman Lab: <https://open.spotify.com/episode/42F7z6Z4CB8hJAstRqMCiV>

Coffee and L-theanine as a Simple, Yet Effective, Nootropic

Coffee and L-theanine are two of the most popular nootropics.

L-theanine is an amino acid found to reduce feelings of stress. It can also promote relaxation, focus, and mental clarity. You can get L-theanine from green tea, but you



would have to drink about 16 cups to get enough for a nootropic effect. A better way to use L-theanine as a nootropic is by using L-theanine supplement.

L-theanine and caffeine have a synergistic effect. I add 100 mg of L-theanine to my cup of coffee (espresso, of course) to improve my alertness and focus. By doing this, I experience calm focus that lasts for hours and helps get me through my day.

One of my favourite L-theanine supplement is a powder form version I take from an Australian company called Healthwise.

How to Hack Your Sleep for Better Brain Power

Sleep is important,, yet, many don't prioritize it. You may think you're doing yourself a favour by staying up late and getting more done, but science suggests otherwise. Studies show that

sleep is essential for memory consolidation. During sleep, the brain is transferring learned information to the cortex, a long term storage, for memory. If you don't sleep, the information is easily forgotten.

And as we previously mentioned, sleep deprivation is considered a negative stressor that decreases your brain's ability to create new neurons, repair DNA, and lower neural inflammation. Lack of sleep also affects mood, concentration levels, cognitive performance, and obesity risk.

What's the solution? Well, sleep is a very complex topic, but I will share with you some practical tips and actions that I learned from my podcast interviews and some self-experimentation.

1. Start tracking your sleep quantity, stages, and consistency. Focus on these data

- How much REM sleep do you get per night?
- How much deep sleep do you get per night?
- How many times do you wake up during the night?

- What was my night-time heart rate and the heart rate?
- How did my body temperature fluctuate during the night?

You don't need to be overwhelmed by all these metrics as trackable devices such as smart rings or bracelets can measure these data for you. All you have to do is look at the data and take targeted actions based on the data you receive. My favourite device is the Oura ring.

2. Your Sleep Hygiene starts from the moment you wake up. Get 3-15 minutes of sunlight exposure as soon as you wake up.

3. Go easy on stimulants.

We all love a good cup of coffee (I certainly do), however, it's

better to avoid caffeine after noon, as caffeine takes about 7-12 hours to leave the body. If you drink caffeine late in the afternoon, you may still have caffeine circulating in your

bloodstream in the evening. This can negatively affect your ability to relax and deteriorate your sleep. Note that stimulants also include teas and energy drinks (the latter I don't recommend anyway).

4. Avoid blue light exposure at night.

Exposure to blue spectrum light waves affects your melatonin production and can delay sleep up to three hours. Unfortunately, we are bombarded by blue lights (such as LED lights and screens). Ideally, you would want to avoid blue lights altogether at night. However, if you have to be exposed to blue lights for some reason, there are specific tools you can use. You can limit your blue light exposure by using blue-blocking glasses. There is also a great app called f.lux which will add a filter layer to your laptop and phone screen.

5. Optimise deep, and REM sleep stages.

This is such an important and extensive biohack, that it would make another full article to go through all of what's involved. However, there are some fundamental simple steps to make sure you spend adequate time in each sleep

stage. Try these:

- Supplement with Reishi mushrooms: I use an amazing Reishi from Kaapa Health. I love their reishi because I was able to increase my REM sleep by at least 40 minutes per night with their reishi mushrooms.

- Have an early dinner: Since I started tracking my sleep I saw how late dinner almost equals lower deep sleep. It's better to have your dinner at least 3 hours before you go to bed.

- CBD oil. If you are in a country where this is available, you might want to consider trying it. It does miracles for my deep sleep. There is so much more to share and say about sleep; this is why I recorded an entire podcast episode (1+h long) about it with Mollie McGlocklin. You can find the episode here:

<https://open.spotify.com/episode/1xCybilLhW8efGDldjucwn>



How Meditation can Increase your Mental Wellbeing?

Meditation is also an excellent way to improve mental health. Studies show that meditation can decrease anxiety, increase focus, and even make you happier. Meditation is also a great way to relax before bedtime if you're having trouble sleeping!

A research review from 2014 found meditation to relieve depression and anxiety. For depression, meditation was about as effective as an antidepressant.

It can feel overwhelming at first, but I guarantee it is worth your time. All you need is 10 minutes a day (at least to begin with).

Thanks to meditation, I was able to reach a better state of mind and improve health biomarkers. For example, my Heart Rate Variability has increased drastically.

The Oura ring has some built-in meditation sessions which you can use (Oura also gives cool metrics such as Body Temperature and HRV), otherwise, if you are starting out, here

are two amazing apps: HeadSpace and Calm.

A Journey of a Thousand Miles Begins With a Single Step.

For those who have been biohacking for a while already, these tips are probably familiar. However, if some or all of them are new for you, don't worry. We've all been there once. My

advice for you is to start using them in your daily life one by one and add more in gradually.

“Remember that we are all individuals and have different biochemistry, genes and minds that affect how our bodies respond to biohacks. Keep tracking to know what hacks produce the most positive results for you. And always consult your physician first.”

P.S. I saved the best for last. I first want to thank you for letting me share these tips with you and to finish, I will share my absolute favourite biohack for the brain and mind: Never stop being curious – you got this!

ABOUT RENATO CAPASSO



Renato is a 34-year-old professional Biohacker, six figures entrepreneur and host at the SUPERYOUMANPODCAST.

With his podcast, he interviews the leading doctors and scientists to unlock current science information to everyone, with one goal: transform you from a Human into a SuperyouMAN.

Renato is currently trying to reverse his biological age, and he aims to be the leader of Biohacker in Australia.

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EARLY vs LATE NIGHT EATING: CONTRADICTIONS, CONFUSIONS, AND CLARITY

The article below is not the full article but rather a condensed version for a better reader experience. If you'd like to read more please visit [Melanie's website](#) here to read the entire article.

Is our experience of the world, including the encompassing health effects of what we eat, pre-determined by timing?

Humans display a definitive rhythm of metabolic and appetite-related hormones. These rhythms appear in all parts of the body – including the pancreas, liver, and even body fat cells – and are primarily controlled by the hypothalamus' suprachiasmatic nucleus (SCN). External factors, known as “zeitgebers,” can affect these rhythms, a primary one being meal timing. These hormones may indicate that certain times of day are more suited to eating than others, while deviations

from these rhythms may encourage metabolic issues. When nocturnal rodents eat during the day, they can experience disruptions in their circadian clocks and metabolic issues.

But how does this pan out in humans, particularly when it comes to the increasing popularity of intermittent fasting? Also known as “time-restricted eating,” this pattern of eating mandates eating all of one's daily calories within a limited daily time window, the self-selected timing of which may be early in the day, late at night, or anywhere in between.

CIRCADIAN HORMONAL RHYTHMS

The 2021 Nutrients study, Beneficial effects of early time-restricted feeding on metabolic diseases: importance of aligning food habits with the circadian clock, evaluates the role of hormones in our circadian rhythms, with particular regard to their effect on meal timing.

According to the study, cortisol peaks in the early morning. *A catabolic hormone often associated with the fasted state, cortisol actually encourages the release of all fuel substrates into the bloodstream: fatty acids, glucose, and amino acids. It would seem that a period of naturally high cortisol would indicate the body is accustomed to generating energy endogenously, rather than taking in a meal, and early morning would thus not be a good time to eat* (despite the study concluding the exact opposite).

Up next we've got adiponectin, a hormone which promotes burning fat and carbs, and which – according to the study - is secreted between 10 a.m. to 9 p.m., peaking at 11 a.m. Studies have found adiponectin correlates to eating disinhibition, but not eating restraint or hunger. These mixed eating behaviors, coupled with the hormone's ability to promote burning fat and carbs, would argue nuance may be needed to determine if adiponectin is best suited to burning fuel from a meal or from a fast.

The nuance for adiponectin's role in benefiting either the fasted or fed state, may involve adiponectin's transition in its role from catabolic (conducive to a fasted state) to anabolic (more appropriate for a fed state). This switch is mediated by the appearance of a third-party hormone: insulin. According to the study, natural insulin secretion occurs from 2-6 p.m., with



a peak from 4-5 p.m. This would indicate that 2-6 p.m. might be a prime time for eating. 6 p.m. is also when the hunger hormone ghrelin peaks. A 2019 early vs. late time-restricted feeding study (discussed in detail later), also found ghrelin was higher at 12 p.m. than 8 a.m., with circadian variation of hunger peaking later in the day. The researchers concluded that “prescription of TRF later in the day may have greater effects on reducing appetite and may aid compliance.”

In fact, the 2015 Effect of extended morning fasting upon ad libitum lunch intake and associated metabolic and hormonal responses in obese adults looked at participants who ate either breakfast and lunch, or just lunch. Those who skipped breakfast and ate just lunch, unsurprisingly had lower levels of the satiety hormone leptin, yet, more surprisingly, had lower levels of the hunger hormone ghrelin. In other words, skipping breakfast reduced hunger. Furthermore, the breakfast skippers did not eat more at lunch than those who had breakfast, leading the researchers to conclude that “extended morning fasting does not cause compensatory intake during an ad libitum lunch nor does it increase appetite during the afternoon.”

The 2021 Nutrients study, however, ironically, concludes that “the consumption of food should not occur during the insulin peak because it induces fat storage.” This also conflicts with the study’s statement that “during the resting phase, insulin levels are reduced...If glucose consumption occurs during the evening, the body will not be able to process it properly, leading to lower insulin sensitivity.” So according to the study, we should neither eat when insulin is high (because it promotes fat storage) nor when it is low (because then we won’t properly process food.) It would seem the researchers interpret insulin in whatever way most conveniently supports an earlier-eating schedule.

It makes sense to eat when the hormones which make us hungry and tell us to store fuel, are naturally high. These are ghrelin and insulin, which both peak at 6 p.m. Ideally, we would also have a hormone present which would make us feel full: leptin. According to the study, leptin begins rising at 4 p.m. and peaks at 7 p.m., before declining until 2 a.m. Leptin also “removes food intake, increases lipolysis, and inhibits fat accumulation”: all things we would want when eating! Ironically, the researchers (illogically?) conclude that eating “should [not] occur at night when leptin is produced, since it normally induces satiety.”

THE ROLE OF DARKNESS

To me, the data seems to indicate that we are ripe for eating around 4-7 p.m. But what about after that?

Studies consistently find decreased glucose tolerance in the evening. As noted in the previously discussed 2021 Nutrients study, “Glucose tolerance, for an identical meal, is higher in the morning (8 a.m.) than in the evening (8 p.m.), and similar rhythms have been observed in rodent models.” That said, an overwhelming





number of these studies analyze participants eating throughout the day. It's therefore hard to ascertain if the decreased glucose tolerance is due to an inherent temporal hormonal rhythm, or rather due to decreased glucose tolerance from extended eating all day. (One is typically most insulin sensitive when breaking a fast, which, in many of these studies, would be occurring for those eating breakfast, not dinner.)

The pancreas also features melatonin receptors, and melatonin inversely correlates to insulin. This indicates that darkness should be a time of high melatonin and low insulin, which does not seem appropriate for eating, as it could more likely encourage glucose intolerance.

“Since it is darkness, rather than timing, which most potently affects melatonin release (and consequently reduces insulin), I’d hypothesize that darkness, rather than evening per se, may be a primary factor in determining when we are best suited to not eat.”

THE BREAKFAST BIAS

Since I diverge significantly from many researchers’ conclusions, I would like to point out some of the inherent biases evident in the 2021 Nutrients study.

To start, the researchers argue against late-night eating with correlational (not causal) evidence, unrelated to timing. For example, the researchers proclaim that late-night eating is more associated with “processed and ultra-processed foods enriched in fats, salt, and sugar, [which] are positively associated with being overweight and obese.” This arguably bears no place in an analysis of the timing of meals, since these factors speak to composition only. (And what about breakfast cereals?)

The researchers also note that “people with late dinner habits are more susceptible to consume larger portion sizes, second rounds, and energy-rich foods; these people also present a high fat mass, insulin resistance, and cardiovascular risks.” Again, this is the what and how much of the eating, not the when of the eating.

Connecting late-night eaters to typically higher weights, insulin resistance, and heart issues, while true, is correlational, as is the opposite common finding: that breakfast eaters are leaner, with less heart disease. But is this from the timing of the eating, or due to the “healthy user bias”: being told for years that breakfast is healthy, those who eat breakfast are often the type who naturally engage in other healthy lifestyle practices.

Most importantly, can we realistically draw any conclusions from late-night eaters correlating to health issues, when the majority of these late-night eaters were likely also eating throughout the day? Skewing the majority of the calorie intake to earlier vs. later in the day, may have drastically different implications than only eating early or late. The former (those who eat throughout the day, but with the majority at night) may seem searingly relevant, when in reality, may bear little if any relevance. Fasting throughout the day, and then eating only in the evening, may reduce (if not eradicate) all the issues of eating later when also eating earlier.



EARLY VS. LATE EATING STUDIES

What have studies looking at early vs. late-night eating windows actually found?

The 2019 Time-restricted feeding improves glucose tolerance in men at risk for type 2 diabetes: a randomized crossover trial published in *Obesity*, looked at 15 obese men who ate in a 9-hour time-restricted feeding window that was either early (TRFe) between 8 a.m. to 5 p.m., or a delayed time-restricted feeding window (TRFd) between 12 p.m. to 9 p.m. The men wore a continuous glucose monitor for 7 days while following their normal diet; then implemented one of the TRF windows; then followed their normal diet for 2 weeks; then implemented the other TRF window.

The researchers found that TRF improved glucose tolerance, regardless if it were early or delayed. By day 7, the insulin and glucose response 180 minutes after the first meal at either 8 a.m. or 12 p.m. – for both insulin and glucose – was almost identical. The

study notes that the AUC overall was better for the early feeding window, but looking at the charts, the trends are eerily similar by day 7. Would the AUC have normalized to match, had the experiment continued? Participants also reacted differently to the TRFe vs. TRFd, with some experiencing better changes from the TRFd, indicating the importance of individuality. Both fasting windows lead to weight loss, with no difference between them.

The study concluded that “while only TRFe lowered mean fasting glucose, TRF improved glycemic responses to a test meal in men at risk for type 2 diabetes regardless of the clock time that TRF was initiated... This study suggests that there may be some flexibility in the clock time TRF is initiated...”

OTHER ENLIGHTENING STUDIES

To date, I can find no other studies directly comparing an early to late-night eating window in an intermittent fasting pattern, but we can still analyze the implications of other research.

While the 2007 Impact of reduced meal frequency without caloric restriction on glucose regulation in healthy, normal-weight middle-aged men and women did not directly compare late-night to early night eating, it did compare a late eating one meal a day (OMAD) window (4-8 p.m.) to a 3 meals per day pattern, for 8 weeks. The researchers found that the late-night window elevated blood sugar levels, delayed insulin response, and impaired glucose tolerance the next morning, but did not affect leptin and ghrelin.

I didn't find it surprising that those who ate in a late window, with likely a heavier dinner the night before, experienced higher morning blood glucose compared to those who had eaten throughout the day. The

researchers drew this same conclusion, noting that the high blood sugar response “could be explained, in part, by continuing absorption of the greater amount of food consumed in the evening in the subjects on the 1 meal/d diet.”

I'm also not surprised by the reduced response to the glucose tolerance test, since those who followed the later evening window, likely were conditioned to process glucose later. And while the later eaters seemed more insulin resistant in the morning, other markers of impaired glucose tolerance – like fasting insulin, leptin, glucagon, and ghrelin – were not affected. Furthermore, the researchers noted that the higher blood sugar levels in the morning were likely a transient change: “The 1 meal/d diet on glucose tolerance was rapidly reversed upon return to the 3 meal/d diet, indicating that the diet had no long-lasting effect on glucose metabolism.”

Despite consuming the same amount of calories, only the OMAD group lost weight. This group also “would have eaten less than those on 3 meals/day if we had not asked them to consume the same amount of food that they normally eat.” Ergo, practicing a late-night eating window in a “real world” situation, would likely lead to a further natural reduction in calories, and subsequent weight loss.

“This naturally fulfills the researchers’ ultimate conclusion, that “the available data therefore suggest that meal skipping or intermittent CR diets can result in health benefits including improved glucose regulation, but only if there is an overall reduction in energy intake.”

In a similar setup, the 2007 A controlled trial of reduced meal frequency without caloric restriction in healthy, normal-weight, middle-aged adults published in the

American Journal of Clinical Nutrition, looked at 15 normal weight individuals who consumed either 3 meals per day for 8 weeks, or 1 meal a day from 5 p.m. – 9 p.m., with a washout period of 11 weeks, before trying the alternate version. The participants consumed a controlled calorie intake to maintain their body weight.

Unlike the group eating throughout the day, the OMAD group reduced their fat mass specifically, while maintaining muscle. While the OMAD group experienced increased hunger and desire to eat, they were taken before eating, and most of the participants reported “extreme fullness after the meal and had difficulty finishing their food in the allotted time.”

While the participants consumed the same macronutrients, fatty acids, cholesterol, and fiber with the 2 controlled diets, the researchers reduced food volume for the OMAD group with energy-rich foods. If this initiative were not taken, there might have been even more weight loss or beneficial effects from natural calorie restriction. Ironically, the researcher concluded that “without a reduction in calorie intake, a reduced-meal- frequency diet does not afford major health benefits in humans.” Yet the participants would have restricted their calories in a free living situation.

In sum, the participants in the OMAD group were hungrier before their meals, but they lost more weight, maintained muscle mass, felt full, and had to be forced to finish their food.

TIMING AND MORNING GLUCOSE TOLERANCE

The 2007 Impact of reduced meal frequency without caloric restriction on glucose regulation in healthy, normal weight middle-aged men and women, looked at the effects of all day eating vs. eating in an evening window from 5 to 9 p.m., for its effects on morning glucose tolerance.

The researchers found morning blood sugars were higher after the night eating window, with reduced glucose tolerance. Fasting insulin was not different between the groups, and despite having a greater blood glucose at baseline, there was no significant difference in insulin response to the morning oral glucose tolerance test.

I don’t find these results surprising, since the late-night participants were coming off a much greater, and more recent calorie intake. Indeed, the researchers concluded that the “difference in fasting glucose levels could be explained, in part, by continuing absorption of the greater amount of food consumed in the evening in the subjects on the 1 meal/d diet... which could have influenced morning insulin sensitivity.”

The researchers also noted the participants were forced to overeat in the 4-hour window situation: “[T]he subjects would have eaten less than those on 3 meals/day if we had not asked them to consume the same amount of food that they normally eat on a 3 meal/d schedule.” Like a previously discussed study, I do not believe the implications of this can be overstated. Either way, the glucose intolerance was seemingly transient, and rapidly reversed when the participants returned to a pattern of eating throughout the day. And that said, if one consistently implements an evening OMAD approach, they are not eating in the morning anyways, so I’m not sure what we can extract from this.

THE ROLE OF SELECTION AND SOCIAL CONTEXT

Let us consider the role of self-selection, as participants are often delegated to a certain window, or mandated to consume all calories, despite satiety. As such, the patients might have been more compliant if they had chosen a time window of their liking, and a few studies even noted the patients were made to consume more than they naturally would have. I'd hypothesize if people chose their own time-restricted window they like, and only ate to satiety, the potential benefits of time-restricted eating would be greater, even with later evening windows.

As noted in a 2020 Cell Metabolism study, “[I]n all TRE studies in which negative effects were reported, the timing of the TRE was pre-determined for the participant. Taking an individual's schedule and personal preference into consideration and letting the participants choose their own TRE interval are likely important factors for adherence, efficacy, and reducing adverse effects.”

A later time window may also work better for many people, due to aligning with social events. As noted in the Cell Metabolism study, a TRE study “affected opportunities for people to engage in evening social eating and drinking activities.” The feasibility of adherence, taking into account personal preferences and social factors, is likely of key importance when experiencing lasting benefits from time-restricted eating.

CONCLUSION

I wasn't sure what I'd find in tackling the scientific literature on early vs. late eating. Given the typical early-eating-is-best-late-eating-is-awful zeitgeist, it wasn't looking promising for my admittedly very late evening window. That said, I found the studies on the matter to be conflicting, contradictory, or bearing an evident inherent bias for early eating.

While we can waltz around in theories of hormones and the “ideal window,” the practical implications of engaging in any given window, may make the most difference. Time-restricted eating seems to realistically provide benefits, regardless of the exact timing, even if that timing isn't as “good” as it could be. Perhaps it's best when humans select a window which works for them personally, and which they can stick to. Maybe the best window to keep, is the window you keep. If you enjoy fasting every day and eating at night, the literature – along with myriad anecdotal evidence – seems to indicate it will likely be profitable for your health, just not the breakfast cereal industry.

RESOURCES

[Early versus late time-restricted feeding in adults at increased risk of developing type 2 diabetes: Is there an optimal time to eat for metabolic health? https://onlinelibrary.wiley.com/doi/full/10.1111/mbu.12479](https://onlinelibrary.wiley.com/doi/full/10.1111/mbu.12479)

[Meal timing regulates the human circadian system - https://pubmed.ncbi.nlm.nih.gov/28578930/](https://pubmed.ncbi.nlm.nih.gov/28578930/)

[An effectiveness study of early or late time-restricted feeding on body composition – pilot study https://academic.oup.com/cdn/article/4/Supplement_2/1701/5844197](https://academic.oup.com/cdn/article/4/Supplement_2/1701/5844197)

[Beneficial effects of early time-restricted feeding on metabolic diseases: importance of aligning food habits with the circadian clock \(https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8143522/\)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8143522/)

[Adiponectin and human eating behaviour: a Mendelian randomization study \(https://jmhg.springeropen.com/articles/10.1186/s43042-019-0022-5\)](https://jmhg.springeropen.com/articles/10.1186/s43042-019-0022-5)

[Diurnal variations in peripheral insulin resistance and plasma non-esterified fatty acid concentrations: a possible link? \(https://pubmed.ncbi.nlm.nih.gov/10456206/\)](https://pubmed.ncbi.nlm.nih.gov/10456206/)

[A controlled trial of reduced meal frequency with-out caloric restriction in healthy, normal-weight, middle-aged adults. A.m. J Clin Nutr \(https://pubmed.ncbi.nlm.nih.gov/17413096/\)](https://pubmed.ncbi.nlm.nih.gov/17413096/)

[Early improvement of left ventricular function during caloric restriction in obesity. \(https://pubmed.ncbi.nlm.nih.gov/3804560/\)](https://pubmed.ncbi.nlm.nih.gov/3804560/)

[Effects of eight weeks of time-restricted feeding \(16/8\) on basal metabolism, maximal strength, body](https://pubmed.ncbi.nlm.nih.gov/31002478/)

[composition, inflammation, and cardiovascular risk factors in resistance-trained males \(https://www.researchgate.net/publication/309132377](https://www.researchgate.net/publication/309132377) Effects of eight weeks of time-restricted feeding 168 on basal metabolism maximal strength body composition inflammation and cardiovascular risk factors in resistance-trained males)

[Time-restricted feeding in young men performing resistance training: a randomized controlled trial \(https://pubmed.ncbi.nlm.nih.gov/27550719/\)](https://pubmed.ncbi.nlm.nih.gov/27550719/)

[Beneficial effects of early time-restricted feeding on metabolic diseases: importance of aligning food habits with the circadian clock \(https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8143522/\)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8143522/)

[Effects of cortisol on carbohydrate, lipid, and protein metabolism: studies of acute cortisol withdrawal in adrenocortical failure \(https://academic.oup.com/jcem/article/92/9/3553/2597859\)](https://academic.oup.com/jcem/article/92/9/3553/2597859)

[Effect of extended morning fasting upon ad libitum lunch intake and associated metabolic and hormonal responses in obese adults \(https://pubmed.ncbi.nlm.nih.gov/26278005/\)](https://pubmed.ncbi.nlm.nih.gov/26278005/)

[Time-restricted feeding improves glucose tolerance in men at risk for type 2 diabetes: a randomized crossover trial \(https://pubmed.ncbi.nlm.nih.gov/31002478/\)](https://pubmed.ncbi.nlm.nih.gov/31002478/)

[A controlled trial of reduced meal frequency without caloric restriction in healthy, normal-weight, middle-aged adults \(https://pubmed.ncbi.nlm.nih.gov/17413096/\)](https://pubmed.ncbi.nlm.nih.gov/17413096/)

[Impact of reduced meal frequency without caloric restriction on glucose regulation in healthy, normal weight middle-aged men and women \(https://pubmed.ncbi.nlm.nih.gov/17998028/\)](https://pubmed.ncbi.nlm.nih.gov/17998028/)

[Ten-hour time-restricted eating reduces weight, blood pressure, and atherogenic lipids in patients with metabolic syndrome \(https://pubmed.ncbi.nlm.nih.gov/31813824/\)](https://pubmed.ncbi.nlm.nih.gov/31813824/)

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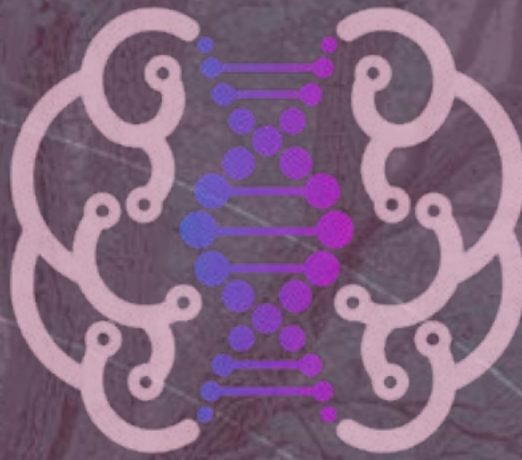
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