brain cleaning study - penn state brain cleaning study

No specific studies titled 'brain cleansing' have been officially published by Penn State (Pennsylvania State University).

However, scientists at Penn State and other institutions are conducting numerous studies related to **brain cell regeneration** , **neuroprotection** , and **the brain's natural cleansing mechanisms** (the glycemic system):

1. **Neuroregeneration:** Research by Gong Chen and his team at Penn State focuses on transforming glial cells (scar cells) into functional neurons after brain injury, helping to restore damaged areas of the brain.
2. **The Glymphatic System:** Scientific studies show that the brain cleans itself by increasing the space between cells during deep sleep, allowing cerebrospinal fluid (CSF) to remove toxic proteins such as Beta-Amyloid.
3. **"Nanomotors" for internal treatment:** Professor Tom Mallouk's research team at Penn State has developed tiny nanomotors that can move within the body to aid in disease treatment, opening up high potential applications in biomedicine. [1, 2, 3]

These studies primarily aim to **treat neurodegenerative diseases** (such as Alzheimer's) or **brain damage** , not the typical commercial "detox" or "cleansing" methods for the brain. For the most accurate results on a specific study, you can check the official Penn State University website or scientific research databases. Duowis

Neurologist David Perlmutter is a five-time New York Times bestselling author. With books translated and published in 27 languages, he has set new standards for healthy living worldwide. Dr. William Davis, author of *Wheat Belly*, commented: "Perlmutter's book is a rare and fascinating exception: its information empowers and enlightens us, presented clearly and concisely."

Dr. Perlmutter's accolades include: the Linus Pauling Award for innovative approaches to neurological disorders; the Physician of the Year award from the National Dietetic Association; the Humanitarian Award of the Year from the American College of Nutrition; and most recently, the Global Leadership Award, presented at the 2019 Coordinating Healthcare Conference.

In their book 'Detoxifying Your Brain', David Perlmutter (and his son Austin Perlmutter) identify and point out the factors that are eroding our lives, and then offer the necessary methods to think clearly, make sound decisions, build strong connections, and cultivate healthy habits.

With a ten-day program featuring 40 delicious recipes, 'Brain Cleansing' is the key to cultivating a more meaningful and fulfilling life. The book is divided into two parts:

1. Part I, 'Living in Confinement': The Causes of Disconnection Syndrome, which disrupts the human mind.
2. Part II, 'Healing Body and Soul', presents methods for clearer thinking, strengthening relationships with others, and building healthy habits: Dietary changes; Sleep; Exercise; Mindfulness;

Introducing a 10-day brain cleansing practice, combined with delicious recipes.

> "Today, attention, choices, and health can be manipulated far too easily. 'Brain cleansing' shows us a way to optimize health—a necessary element for societal change," assesses Dr. Rudolph Tanzi of Harvard Medical School.

Here are some excerpts from this book for your reference.

Disconnection Syndrome - a sad reality

What's the first thing you do when you wake up this morning? What does a typical morning consist of? We're sure your routine has changed considerably compared to 10 or 15 years ago.

1. How many minutes pass before you check your cell phone or browse through media, social networks, or other apps?
2. How many times do you swipe your finger across the screen?
3. What do you usually eat for breakfast?
4. What do you do for your loved ones before leaving home?
5. As you drive to work on that familiar route, do you reflect on yourself and calmly focus on the new day ahead?
6. Or are you feeling anxious, distracted, and overwhelmed?
7. Are you texting, checking emails, and talking on the phone instead of paying attention to traffic signals?
8. When you arrive at work, do you find it difficult to concentrate for extended periods without the distractions of electronic devices?
9. Do you eat lunch at your desk?
10. Do you multitask while your phone is always with you?
11. Do you connect with people primarily through email, text messages, and phone calls, rather than meeting in person?
12. After work, do you take time for a relaxing walk or some outdoor exercise?
13. Or you could go home, pour yourself a glass of water, and have dinner—perhaps a pre-prepared meal?
14. Do you feel sluggish when you go to bed but still can't sleep?
15. Do you keep waking up during the night?

16. And every morning when you open your eyes, you feel discouraged and tired, as if you're just waking up to continue the same monotonous routine?

Our society has undergone a fundamental transformation since the beginning of the 21st century, largely due to the explosion of personalization technology that is now confining us. An estimated 70% of the world's population now owns a smartphone. Data shows that the average internet user spends more than two hours a day on social media.

A survey revealed that Americans spend 42% of their waking time staring at television screens, smartphones, computers, tablets, or other devices. Assuming the average American sleeps 8 hours a night, that means people spend approximately 6 hours and 43 minutes each day glued to screens. Over the lifetime of an average person, that total time would amount to 7,956 days, or nearly 22 years.

This massive upheaval has led to a culture of disconnection – we bury our heads in our phones, glued to our devices, avoiding dissenting opinions, while constantly bombarded with messages that dictate our lives (eat more, buy more, post more, get more likes).

If we pay close attention, we can sense our inner selves. Emptiness. Longing. Being part of modern consumer society is truly transforming the brain. Access to higher-level brain functions is cut off, preventing us from seeing the big picture and making sound decisions.

At the same time, the neural pathways that trigger impulsivity, anxiety, fear, and the urge for immediate gratification are reinforced. This re-connection leads us to waste time and money on things that don't bring lasting happiness.

We are constantly being "starved." That's exactly what companies want, because this very dissatisfaction leads to higher profits. The disturbing truth is this: Our brains are increasingly becoming reliant on the control of others, specifically commercial corporations seeking to exploit the brain's most basic desire—the desire for immediate gratification.

Your attention and decisions are sold to the highest bidder, to companies that know how to manipulate psychology for profit. These companies understand how to manipulate influential neural pathways, making it difficult for us to resist immediate pleasures and a commercialized illusion of eternal happiness.

We call the state of being prevented from achieving lasting happiness the Disconnection Syndrome. And now is the time to change it, to change the eight signs of Disconnection Syndrome: Loneliness, Chronic Inflammation, Fleeting Satisfaction, Narcissism, Poor Relationships, Persistent Stress, Impulsivity, and Unconscious Actions.

Modern Paradox

The first step in combating Disconnection Syndrome is to carefully examine the difference between the 'fake' world and the reality. The truth behind the curtain may be disheartening. But this process gives you real strength.

By assessing the nature of things, you will gradually gain control of your life. When you understand the principles and reasons behind your overbearing thoughts, you can change your life. Replace unproductive choices with liberating ones to find lasting satisfaction and fulfillment. And once you control the connections in your brain, you can build a system from which to continue making appropriate choices.

At first glance, it seems that never before in history have we had so many opportunities to pursue and achieve happiness as we do today. Everyone wears a smile on their face when appearing on social media; television

commercials make us believe that every kind of emotional disorder in the world can be treated with medication.

Nevertheless, rates of anxiety disorders and depression continue to rise. Suicide rates increased in nearly all U.S. states between 1999 and 2016; and among adolescents, the rate rose 56% from 2007 to 2016. This problem persists even as the number of antidepressant prescriptions in the U.S. has increased by more than 400% since the 1990s. And we are using more and more medication, including illegal drugs.

Approximately half of older adults (65 years and older) with anxiety disorders are taking benzodiazepines (e.g., Xanax, Valium, and Ativan) – medications known for potentially life-threatening side effects.

Insomnia affects about a quarter of adults in the U.S., leading many to turn to sleeping pills. Furthermore, alcohol consumption is increasing worldwide, particularly in economies increasingly influenced by the West, such as India and China. Alcohol abuse among adolescents and young adults follows this trend.

Certainly, these "sober" statistics don't reflect a culture of complacency. One might argue that excessive use of social media can foster connection, but nearly half of Americans still report feeling lonely sometimes or consistently. The age group with the highest rate of experiencing this feeling is 18- to 22 years old. Furthermore, only about half of Americans say they have meaningful, face-to-face social interactions.

To understand the reasons behind these modern problems—and how to solve them—we must address the most influential part of the body. The brain, which was formed by the most powerful force in nature: evolution. It has adapted to ever-changing pressures over hundreds of thousands of years, ultimately thriving under a wide range of conditions. The more we understand the brain's resilience and flexibility, the more we appreciate its remarkable capabilities.

But no matter how ingenious it may be, the brain can still be likened to an outdated program, susceptible to manipulation or attack by computer viruses—in this case, modern technologies. The valuable abilities that once helped us survive are now being exploited. This core system exists for our survival and has long been a part of the brain, but now companies are targeting it to control decision-making, and to seize your money, attention, and loyalty. Your thoughts and decisions are becoming a lucrative profit for these companies.

Most importantly, we are losing our sense of individuality and self-worth—our identity is constantly under attack from relentless, repetitive messages about standards of appearance, emotions, and goals. We feel inadequate. It's time to reconnect with our thinking skills and higher-order brain functions.

The human brain is a precious gift, harboring boundless complexity and capacity. What makes humans special is the enormous prefrontal cortex, located just in front of and inside the skull, occupying about one-third of the neocortex—the most recently evolved region, comprising gray matter surrounding the white matter of the cerebrum.

The prefrontal cortex is associated with higher-order brain functions such as future planning, empathy, seeing things from another person's perspective, making informed decisions, and engaging in positive social behaviors—essentially, all the elements that define who we are. The prefrontal cortex regulates thoughts and actions, helping us achieve our goals, from simple tasks like cooking a meal to complex activities like writing a book.

The term used to describe the activities performed by the prefrontal cortex is executive function. Executive function includes the ability to distinguish between opposing thoughts; to identify good and bad, right and wrong, like and unlike; to understand cause and effect; to strive for goals; to predict the outcome of actions based on past experience; and social 'control' (meaning the ability to restrain impulses that could have socially

unacceptable consequences).

Scientific research on executive function is flourishing and has demonstrated that many environmental factors, which are within our control, can influence the health and function of the prefrontal cortex, ultimately affecting behavior and physical well-being.

Unfortunately, much of modern life is silently preventing us from taking advantage of the prefrontal cortex. Our actions are driven by impulse, fear, and the need for immediate gratification—all stemming from an overreaction of the amygdala (the brain's emotional center), as well as overstimulation of brain connections associated with reward.

The extraordinary history of the brain

In just one second, our brains emit a massive amount of signals, transmitting essential information along nerve cells at speeds up to 431 km/h. Nerve cells—the fundamental components of the nervous system—send and receive communications via chemicals and electrical impulses at such incredible speeds that, by comparison, our hearts beat at a mere pace.

We might be surprised to learn more about the brain—an organ located within the skull, weighing approximately 1.3 kg and containing more connections than the stars in the Milky Way. The brain creates all of life's experiences, constantly helping us understand an ever-changing and incredibly complex world, and making decisions even before we consciously realize it.

Our extraordinary brains allow us to thrive while facing a myriad of challenges, including threats to our very existence.

In developed countries, we have removed most barriers to basic needs, as well as potential life-threatening dangers. In theory, this gives us the opportunity to focus on purpose, happiness, and long-term health. But we are facing epidemics of loneliness, depression, anxiety, addiction, and preventable chronic diseases.

This unfortunate situation arises because the age-old processes of the brain, which have sustained us for hundreds of thousands of years, are being controlled by the circumstances of contemporary life. This mental dominance leads us to constantly demand immediate gratification, remaining in a state of prolonged and futile stress, fear, and dissatisfaction.

One of the greatest discoveries in human history is the brain's plasticity – throughout life, it can reorganize itself by forming new neural connections. The brain readily absorbs influences and has the ability to adapt. Therefore, you can change the connections in your brain right now.

In neuroscience, we often say 'communication, connection': When two brain cells communicate with each other, the connection between them becomes stronger. The more signals exchanged, the stronger the connection.

Every time you encounter something new, your brain makes small changes to existing connections to adapt to that experience. And the more you perform a particular activity, the deeper and more influential those connections become. Simply put, the more often you do something, the more likely you are to repeat it. Whether beneficial or not, all behaviors follow this rule.

In fact, how the brain is used determines how it is organized. As you learn and experience the world, the connections between neurons change. New connections are made, and unused connections gradually disappear.

This is how we build a more efficient brain. The brain is constantly evolving and adapting dynamically, both structurally and functionally, to respond to experiences, understanding, and even trauma.

As Dr. Michael Merzenich, a pioneering neuroscientist in the field of brain plasticity research, put it: 'In the midst of constant change, with each passing moment, we are making a choice. We are actually choosing who we will become in the next moment.' In the wisdom of the 14th Dalai Lama: 'The brains we build reflect the lives we master.'

Think back to the last time you felt truly happy, fulfilled, clear-minded, well-rested, and deeply connected, not only with yourself but also with the people and the world around you. If that time has long passed, then what you need to do is seek reconnection. Of course, it's difficult to achieve that calmness and contentment in the face of the unavoidable and increasingly heavy obligations that modern society places upon us.

The key here is to understand what's going on in your mind, then change the brain connections that lead down that negative path. This book is written on a fundamental premise: the brain's processes are being severely manipulated, leading to behaviors that make us feel more lonely, anxious, depressed, distrustful, prone to illness, and overweight than ever before. At the same time, we feel alienated from ourselves, from others, and from the world in general.

We can improve. We can improve our brains by disconnecting and reconnecting. We master technology, not let technology master us. We know you can do it—through resetting your thinking system.

We will no longer be victims of fatigue, loneliness, and the relentless urge to seek short-term fixes. This new foundation—a 'brain cleanse' method for reconnecting and transforming lives—will guide you on how to 'cleanse' your mind and activate neural pathways capable of delivering clear thinking, deeper relationships, and mental well-being.