SUMMARY

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BRAIN RULES

BY JOHN MEDINA

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Summary of Brain Rules by John Medina

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Learn how to make the most of your brain.

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Introduction

The human brain is the most powerful super-computer on the planet. It helps you to learn all kinds of new information from complex math equations to Tik Tok dances. But it also gets overloaded. It randomly deletes a fact for no apparent reason. It forgets stuff. And these little inconveniences can lead to big problems when we forget important meetings, make embarrassing mistakes, or struggle to solve problems. So, wouldn't it be nice if your brain could operate at its full capacity? Wouldn't it be great if your brain came with a manual that you could follow to optimize its potential? Fortunately, it does! That manual is *Brain Rules* and over the course of this summary, we'll explore the rules you need to know if you want to make the most of your brain.

Sleep is Your Best Friend

If you're like most people, then it's probably pretty safe to say that you don't get a regular 8 hours of sleep every night. In fact, you might even think of yourself not as a night owl or an early bird, but as some form of permanently exhausted pigeon! And the reality is that that description is truer than you think. In fact, for most people, the amount of sleep we should be getting is often cut in half. Sometimes, it's even less than half! And because this pattern of sleep deprivation is so common, you're probably familiar with the concept of a "sleep debt." According to the American Sleep Association, "sleep debt, also known as sleep deficit, describes the cumulative effect of a person not having sufficient sleep. It's important for people to understand that a large sleep debt can well lead to physical and/or mental fatigue. The two known kinds of sleep debt are the results of total sleep deprivation and the results of partial sleep deprivation. Total sleep deprivation is when a person is kept awake for a minimum of 24 hours, while partial sleep deprivation occurs when either a person or lab animal has limited sleep for several days or even weeks."

As you can see from this example, your sleep debt can have a profound and detrimental impact on your daily life and cognitive function. It's also almost impossible to catch up or "pay off" that sleep debt. That's because your body remembers that lost sleep; the sleep deficit literally accumulates in your body, resulting in physical symptoms. And unfortunately, the same is true of traumatic experiences. So, if your body is constantly in "survival mode," battling perceived danger or experiencing chronic stress, the effects of operating in survival mode will accumulate in your body as well.

So, if any of the previous information sounds like it's describing you, then you might want to re-think your sleep routine for a variety of reasons. One good reason is that it actually requires four hours of deep, restful sleep to help you catch up on just one hour lost. There's also the tiny, insignificant fact that your life literally depends on sleep. But unfortunately, our sleep schedules are rarely as healthy as they should be. Because our lives are ruled

by the ever-increasing pressures of the chaotic modern work day, we often find ourselves tumbling into bed at inconsistent times. We sleep too long or not enough. We sleep with the TV on or our REM cycle is interrupted by the constant glow of our phones. We know sleep is supposed to make us feel refreshed, but it never seems to feel that way when we crash into bed at 3:00 am after a long day's work and re-awaken at 7:00 only to do it all over again. And while that definitely leaves us feeling sluggish and groggy, improper sleep can have some other scary side-effects, like getting sick.

And as if all this isn't bad enough already, lack of sleep can damage your brain! This was discovered by scientists Aleksanteri Aspelund and Antoine Louveau, who-- ironically-- were working on the same project, miles apart from each other at different universities. They discovered the brain's glymphatic system, They learned that the glymphatic system is responsible for removing toxins in the brain, including amyloid beta, which is known to cluster in the brains of people who suffer from Alzheimer's. They also discovered that the glymphatic system is 60% more effective when you're sleeping as it uses this down-time to clean out the brain's toxins. Researchers at Stony Brook University in New York have since discovered that this process seems to work best if you're sleeping on your side. So, if you want to boost your brain's ability to do a nightly clean-up, you might try altering your sleep positions! Likewise, developing a healthy sleep pattern is crucial if you want to maximize your brain's cognitive potential. When you get enough sleep, you feel better, have more energy, and your mind is clearer as you move through your day. So, if you want to be your best, healthiest self, you need to make sleep your new best friend!

The author's research indicates that all people have a unique sleep cycle and that people are healthiest when they adhere to their body's ideal sleep cycle as much as possible. So, discovering your body's unique rhythm is the first step to cultivating a pattern of healthy sleep! 10% of the population fares best when they wake up before dawn. These are your quintessential morning people and people in this category will be at their most energetic through the early morning and afternoon. By contrast, another 10% of the population is healthiest when they adhere to an almost nocturnal schedule. People in this

category head to bed around 3:00 am and they are most alert in the early evening. The remaining 80% of people in the world are somewhere in between. Just as some people are introverts and some people are extroverts, others are ambiverts who hover back and forth between the two extremes. If you fall into the latter category, your best bet is to listen to what your body is telling you on any given day and go with that. If you can cultivate a healthy sleep pattern, you'll be well on your way to optimizing your brain!

Fight or Flight is a Very Real Response That Affects Your Physical Health

Everyone knows about the human "fight or flight" response; our bodies come pre-downloaded with this evolutionary "software." But when you think about this program in action, what types of situations do you imagine? Is it something magnanimously scary like a blitz attack from a stranger with a gun? Is it an experience like being chased by a bear? Or can it be triggered by something as ordinary as the combination of a shrieking tea kettle and a crying baby? Can it be triggered by the pressure of making a stressful decision while driving? Although you might be surprised to hear it, these everyday stresses are perfect and legitimate examples of pressures that activate our primal fight or flight response. You might also be surprised to know that consistent exposure to high-stress fight or flight situations can take a serious toll on your mental, physical, and emotional health. But if you've ever struggled with a mental health disorder such as anxiety, you know just how true this is.

That's partly because our brain works together with our emotions to help us perceive threats. These emotional cues then help us to identify feelings like, "I feel unsafe in this situation!" And ultimately, with the help of these cues, we can connect with our fight or flight response to determine our next course of action. The problem, of course, is that our emotions often lie to us and this is one of the root issues when it comes to disorders like anxiety. For example, your brain might be sending you signals that something as simple as a conversation or a phone call is extremely unsafe. As a result, we get incredibly anxious and we may feel the need to flee the situation. The presence of these conflicting cues therefore means that human beings are not always quite as rational as we think we are; our logic can be easily overpowered by emotional cues. And as you can imagine, these cues and the reactions they trigger can often be problematic.

One significant problem is the fact that prolonged exposure to chronic stress can literally cause our brains to atrophy. A stressed brain struggles to acquire

or retain information. This can lead to memory loss, trouble concentrating, and an ability to solve problems, complete tasks, or handle stressful situation. It also causes us to develop learned helplessness, which means that we become so accustomed to stress, we stop trying to get better. As you can see from these examples, prolonged exposure to chronic stress affects every area of our lives and leads to some extremely unhealthy results. So, if we want to optimize our brain function, we have to start by reducing our stress!

Your Visual Memory Can Help You Learn and Remember Anything

Have you ever wished you had a trick that would help you remember anything? It would be incredible if we had a way to suddenly recall where we'd left our keys or the answer we needed for a biology test! But believe it or not, there really is such a trick! And you can use it to learn and remember pretty much anything. That's all thanks to the power of your visual-- or spatial-- memory. Although we frequently take it for granted, our spatial memory is actually more important than we think. In fact, we would quite literally be lost without it! If we didn't have our spatial memory, we would struggle to remember the basic navigational principles that help us stay on top of our daily lives. For example, imagine what your life would be like if, instead of forgetting the name of the person you just met, you regularly forgot how to get home from work! Sure, we could always plug our address into the Maps app, but how scary would it be if you often felt lost on your way to and from familiar places? What if you lacked the ability to remember where you had been before?

All of these freaky options would be on the table without our spatial memory, so if we had to choose what we're more likely to forget, it's probably easier to struggle with little things like names and dates! So, that's why our spatial memory is an awesome and essential part of our lives. But the good news is that our relationship with spatial memory doesn't have to be an either/or situation! In fact, we can train our spatial memory to help with our overall recall! All you have to do is create a mental "information super highway." Put simply, this life hack involves associating information you need to remember with a route you've often traveled before. Here's how it works:

For example, let's imagine that you're trying to memorize some facts about Bleak House by Charles Dickens for a test. But unfortunately, the story is a little long and… well… bleak! With over 1000 pages of verbose and antiquated language, how can you ever commit it all to memory? The author recommends that you start by taking select details that stand out to you and

connecting them to a crazy story that will draw on your spatial memory. For example, if we use the analogy of connecting facts to your daily commute you might imagine that you're on your way to Dunkin Donuts to grab your morning coffee before school. But instead of the customary orange and pink of your traditional Dunkin Donuts, the building is instead a large, gloomy looking mansion! (You can envision this house as the essence of Halloween on steroids-- bats, creepy music, the works!) And that's how you remember Bleak House.

This is a bit of a wacky example, but you get the idea! Whatever you're trying to remember, the point is to tap into your spatial memory. Because your spatial memory automatically registers locations that are significant to you and helps you remember them, associating information with a familiar physical place can hack your spatial memory and help you to remember other types of information as well. The key is simply to make that information wacky enough for it to stand out to you. And the best part is that you can apply this same principle to help you remember anything from someone's name to where you parked. And once you put this principle into action, you'll discover that you can actually remember anything!

Final Summary

Our brains are under tremendous pressure all the time. Our brains are the engines that keep us running and as such, they have to help us remember information and turn knowledge into action. So, it's no surprise that everybody wishes they had a cheat code for their brains-- something that would improve their memory and make them smarter, sharper, or faster. That's what *Brain Rules* is for! By implementing the actionable advice from this book, you can optimize your brain and thrive in every situation.

Whether you need to succeed at home, at work, or at school, you can use the tips in this book to help. You can start by cultivating a healthy sleep pattern. A good night's sleep will ensure that your brain is ready to perform at its best every morning. Next, it's important to identify and reduce your stress. And lastly, hack your spatial memory to help you learn and remember anything. When you apply all of these steps to your daily life, you'll find that your brain can perform like never before!