

Cool Facts Friday #9

Dave Asprey:

Welcome to another edition of Cool Facts Friday. Since this episode is going live during Sleep Awareness Week, I mixed it in a few sleepy facts for you.

Cool Fact No. 1:

And our first cool fact is about how sleep might be one of the oldest body mechanisms. Why we sleep is a mystery in modern science. What we do know though, is that sleep is intimately tied to the state of your central nervous system. There's some new research from Japan that was published in science advances that turned that theory on its head. They found evidence in tiny water-dwelling organisms called hydras, and they think that animals acquire the need to sleep before we had a brain. And that makes sense, going back to mitochondrial biology.

In the lab, these tiny brainless hydras show signs of a sleep-like state, even though they have no central nervous system and they also responded to molecules that are associated with sleep in more evolved animals and humans.

What does that mean for you? It means that sleep is necessary for your sub-cellular components like your mitochondria and for your cells themselves, not just for your brain. And this is one of the reasons that sleep is so important as a biohack, as an anti-aging behavior. And if you can do something that makes you sleep better, you're working directly on your cells because they need it too even though your cells don't have a brain and even though you do.

Source: <https://www.sciencedaily.com/releases/2021/01/210108111055.htm>

Cool Fact No. 2:

Our next cool fact is about how your genes determine whether you're going to be a daytime napper or not. It turns out napping can be good for performance, but if you need to nap all the time, for most people it's a sign something's not working right unless you have certain genes.

Researchers at the Massachusetts General Hospital asked participants in the study whether they napped during the day and they measured the answers against a genetic data set of 400,000 people. They found 123 regions in the human genome that are associated with daytime napping.

What does that mean for you? If you feel like you really need a nap and you've tested having high energy, having low energy and naps work better for you, well, daytime napping is a biologically driven activity, not just an environmental or behavioral choice. So if you like to nap during the day, there might be a genetic reason for it. And you can give yourself a break and you can take a nap and you should have enough energy to be able to not nap when you need to not nap, but give yourself a break when you need it. The same things don't work for everyone. And this study explains one of the many situations, 123 different parts of the gene that might make you a napper. No judgment required.

Source: <https://www.sciencedaily.com/releases/2021/02/210210133305.htm>

Cool Fact No. 3:

Your next cool fact is about the link between aerobic fitness and cognition. We already know that exercise makes your brain work better and improves your mental health, so less anxiety, less depression and things like that. But we didn't quite understand the neurological mechanisms of that link

until this new research came out. This is researchers from the University of Tsukuba in Japan, and they found that how fast someone blinks their eyes called spontaneous eye blink rate reflects activity happening in the dopaminergic system in the brain. Executive function, motivated behavior and physical activity are all tied in with the dopamine system in the brain. And the study participants exercise to the point of exhaustion and performed cognitive tasks that measured executive function. And then, the researchers looked at brain activity so they could compare brain performance with eye blink rate. Fast eye blinking indicated higher level executive function and a higher fitness level.

Eye blinking is a marker for dopamine activity in the brain. This is the first study to indicate that dopamine plays a role in linking aerobic fitness and cognition. The study concluded that the less you exercise, the more your chances for dopamine dysfunction go up.

What does that mean for you? Well, it means that we might end up with improved exercise recommendations and regimens. And exercise that specifically focuses on improving the dopamine function in your brain may particularly boost your motivation, your mood, and your mental function. In the meantime, though, we know that it means if you don't have a baseline level of aerobic fitness, that you're probably not going to have a brain that works as well. We already knew that, but now we understand it's tied to dopamine.

Source: <https://www.sciencedaily.com/releases/2021/02/210203094707.htm>

Cool Fact No. 4:

Your next cool fact is about how bad dietary choices as a kid haunt you into adulthood. This proves once and for all that we should burn all of the kids' menus at every restaurant ever. In a recent study researchers at UC Riverside split juvenile mice into two groups and put them on a standard mouse diet or less healthy Western diet. After just three weeks on those different diets, the mice returned to the normal diets that they usually give to lab animals. At the 14 week mark, researchers examined each group of the mice's microbiome and found that the mice who for only three weeks ate the Western diet, had a significantly altered microbiome even into adulthood, specifically the number and diversity of gut bacteria in the Western diet fed mice had plummeted from baseline. The diet that the mice ate as little kid mice shifted the microbiome diversity in a bad way.

What was interesting though, is that after 14 weeks of eating the normal diet, the harmful impact of the Western diet hadn't been resolved. And 14 weeks doesn't sound like a long period of time, but considered how long a mouse lives, that's a long period of time.

What does that mean for you? Well, here's what the researchers said. "We studied mice, but the effect we observed is equivalent to kids having a Western diet, high in sugar and fat, presumably bad fat. The gut microbiome is still being affected up to six years after puberty." And the researchers said, "You're not only what you eat, but what you ate as a child."

And this means that you need to make your kids eat a bulletproof diet now. It doesn't have to be perfectly bulletproof. We're always somewhere on the roadmap. But if your kids eat more of the healthy fats and a lot less Omega 6 fats, you keep them on a very low sugar diet. Doesn't have to be zero sugar, but low sugar and not all the time.

Get them off of grains, get them off of processed junk food, the stuff that kids want the most. What you're going to find is that your kids thrive. They behave better. They learn better. They sleep better. They make your life better. And now, you know that when they're in their mid 20s and 30s, they're going to have healthier guts than all of their friends. It's worth it.

Source: <https://www.sciencedaily.com/releases/2021/02/210203090458.htm>

Cool Fact No. 5:

This cool fact is about how green light can possibly cure migraines. As you know, I'm a huge fan of light therapy. My company TrueLight makes some very innovative things that aren't just red and infrared, but we don't make a green light.

Turn out migraines affect 39 million people in the US and one billion people worldwide, and finding a cure for migraines that's inexpensive and effective could change a lot of people's lives. If you've ever had a migraine, you know what I'm talking about. That's why the University of Arizona looked at green light. They chose people for the study who experienced either chronic or episodic migraines and had failed multiple traditional therapies like oral anti migraine stuff, or even Botox injections. They didn't just use a green bulb, it had to be the right intensity, the right frequency, the right exposure time and the right exposure method, so they're using light as a targeted nutrient basically.

Just like with medications, there's a sweet spot for all light therapy, including this new form of green light therapy. Keep in mind, green light will disrupt your circadian rhythm, but that might be worth it if you have a migraine. The research has found that two hours a day of green light therapy for 10 days resulted in a 60% reduction in migraines pain intensity, along with a reduction in the number of days that people in the study experienced migraines.

What does that mean for you? Well, if you get migraines often, this is seriously cool. Of course, the scientists said this is just a starting point for a trial and once they figure out the mechanism, maybe we can use it for something else.

In the meantime, I would want to look at the study if I had migraines and figure out what light they were using at what intensity and see if maybe you want to have a green light with the right spectrum, the right dose, all the stuff we just talked about, in your home. If not, you can wait a couple of years. I'm betting you that there will be a product on the market that's probably relatively expensive and sold by your doctor, that uses green light in this way, therapeutically. Light really is drug.

Source: <https://www.sciencedaily.com/releases/2020/09/200910090016.htm>