

Cool Facts Friday #11

Dave Asprey:

Welcome to another edition of Cool Facts Friday.

Cool Fact No. 1:

This cool fact is about how hyperbaric oxygen treatments can make your blood cells grow younger. It's a new study from Tel Aviv University, and researchers discovered that high pressure oxygen treatments were able to reverse two of the major processes that cause aging. One of them was the shortening of telomeres. You read about that in *Headstrong*, didn't you? Or in *Fastest Way*, when you figured out that fasting gives you longer telomeres? These are protected regions located at both ends of every chromosome that shorten as you age. And it turns out, oxygen therapy like this fixes that. And they also figured out that it fixed the accumulation of old and malfunctioning or zombie cells in your body.

In this study, the researchers exposed 35 healthy people over 64 to a series of 60 hyperbaric sessions over a period of 90 days. And they found that telomeres grew longer instead of shorter at about 20% to 38% for different cell types.

What does that mean for you? Well, it means you might want to consider hyperbaric oxygen therapy. This study used high pressure steel chambers, but we know from other interviews on *Bulletproof Radio* that even the lower pressure chambers that you can use at home have a substantial effect on your aging, especially if you have anything bad going on with your brain, like a brain injury or Alzheimer's. So find a way to get into a hyperbaric chamber at least once in a while, and ideally do a bunch of sessions close together. You'll see a difference.

Source: <https://www.sciencedaily.com/releases/2020/11/201120150728.htm>

Cool Fact No. 2:

This cool fact is about how infection fighting immune cells in your brain get trained in your gut. This new research comes out of University of Cambridge, and what they found is that the gut trains immune cells to recognize and launch attacks on pathogens. And from there, those cells migrate to your brain surface to protect it. Every minute, about 750 milliliters of blood flows through your brain, which gives bacteria, viruses and other pathogens an opportunity to infect your brain. Luckily, you have something called meninges, or the blood brain barrier that wrap around your brain and are supposed to keep these unwanted invaders out of your brain. But it looks like in some cases, pathogens breach the blood brain barrier, at which point, immune cells that are trained in your gut jump into action and migrate to the brain to start producing antibodies and fight the infection.

The most common route for pathogens to enter your bloodstream is through your gut. And that's why the researchers say it would make sense that your gut would be the perfect training ground for immune cells, so that they can recognize invaders and keep your brain strong.

What does this mean for you? It means that if you test your gut bacteria or at least eat things that are high in prebiotic fiber and you don't eat things with antibiotics or things with glyphosate, things like industrially raised meat, that you're going to have a healthier gut and a healthier gut means a gut that's better able to train immune cells to protect your brain. Emerging research in a lot of Alzheimer's and Parkinson's says that microbes have a larger role than we thought in turning on these diseases. So having a healthy gut is really important, and it all comes down to what you eat and when you eat it.

Source: <https://www.sciencenews.org/article/brain-infection-gut-immune-system>

Cool Fact No. 3:

This cool fact is about transforming your immune system T cells into stem cells that help fight cancer. Researchers found a way to reprogram immune system T cells and transform them into regenerative stem cell-like memory cells known as TSCM cells. And these long lived highly active, call them super immune cells have really strong immunotherapy benefits, specifically they break down tumors. Reprogramming T cells involves a new approach developed at Georgetown, and the reprogramming inhibits the activity of specific proteins called MEK1 and MEK2. Right now, doctors use certain MEK1 and 2 inhibitors to effectively treat melanoma. What we learned in this study is that MEK inhibitors don't just treat specific kinds of cancer, they actually reprogram T cells into stem cell-like memory cells that can fight many kinds of cancer. And they also identified a strategy to reprogram T cells and the mechanism that makes it happen.

What this means for us, certainly if you have cancer, that's good news. But more importantly, reprogramming T cells to act like stem cells is going to have a huge impact on you. Because as you age, your immune system gets less effective. It's one of the reasons that older people are more susceptible to colds and flus and any other diseases. If you have a young person's immune system, you're going to have a higher quality of life and probably live longer. It's one of the reasons that I had my natural killer cells taken out, cultured, and re-injected as part of the research for Super Human because I wanted a young person's immune system, especially given the fact that I weighed 300 pounds and took antibiotics for 15 years, because that's what the doctor told me to do. What this means for us over the next few years is better and better ability to control what your immune system does, and that is good for everyone.

Source: <https://www.sciencedaily.com/releases/2020/11/201123112506.htm>

Cool Fact No. 4:

This cool fact proves once and for all that it really is your mom's fault. Well, really what it proves is that things that happen with your mother may leave a lifelong mark on you. Researchers out of Australia just proved that motherly influence starts as early as when you're just an embryo. And it appears that a protein from a mom's genetic line is involved in a process called imprinting, which happens when different genes have different expression depending on whether they've been inherited from mom or dad. In the case of the specific protein, which is SMCHD1. When an egg is fertilized by sperm, the SMCHD1 lingers in the embryo, and then switches off or silences 10 different genes.

What does this mean for you? Well, right now, we have no idea how to change SMCHD1 in moms, or whether we even should do that. But it's just one more of many, many pieces of data that show that what happens in the womb changes genes through epigenetics, and that those changes can last for your life and even in your offspring.

This is why it's so important before and during pregnancy that you eat good stuff, you don't have too much stress, and basically manage it so all of the genes that should be turned on do get turned on.

Source: <https://www.sciencedaily.com/releases/2020/11/201124092203.htm>

Cool Fact No. 5:

This cool fact is about self-watering soil. There's a new kind of soil from the University of Texas in Austin that really could expand the map of farmable land and reduce the amount of water we use in

agriculture. You know I'm a big fan of building healthy soil. Well, if you're in a desert, it's hard to do that. As we have less and less healthy soil because we keep eating industrial animals and spraying glyphosate on our corn and soy that then makes bad oils that are bad for our mitochondria, and that make you fat... Well, okay. Sorry. Got off track there for a minute. But what these guys did is they figured out an atmospheric water irrigation system that uses a moisture absorbent gel that captures water from the air during the cooler periods at night, especially in the desert.

And during the day, solar heat activates those gels, and then they release the water into the soil. That means you can put an irrigation system in place that works even in places where no one could grow anything and you can make this part of permaculture. So in an experiment comparing the self-watering soil to sandy soil, self-watering solar retained twice as much water and kept radishes alive for 14 days, but sandy soil required constant irrigation and the radishes only lasted for two days anyway.

We are literally in the process of deciding how healthy we want our soil on the planet to be, and taking areas that were considered not useful for life and turn them into fertile areas is our job as human beings.

Source: <https://www.sciencedaily.com/releases/2020/11/201102162653.htm>

I would love to know more of the cool facts that got you excited. Go to daveasprey.com and click on the "Podcast" button and send them into me. I actually read the studies you send me. It's one of the sources of knowledge for me, and I appreciate it.