

THE BIG IDEAS

Hope Molecules
And how to make them.

How to Make Yourself...
Anxious, tired, and hostile. :/

Collective Effervescence
Bubble joyfully TOGETHER.

How We Endure
Hint: Together is best.

OMMS!
Obstacles (literally) make us stronger.

The Joy of Movement

How Exercise Helps Us Find Happiness, Hope, Connection, and Courage

BY KELLY MCGONIGAL, PH.D. · AVERY © 2019 · 272 PAGES

“Around the world, people who are physically active are happier and more satisfied with their lives. This is true whether their preferred activity is walking, running, swimming, dancing, biking, playing sports, lifting weights, or practicing yoga. People who are regularly active have a stronger sense of purpose, and they experience more gratitude, love, and hope. They feel more connected to their communities, are less likely to suffer from loneliness or become depressed. These benefits are seen throughout the lifespan. They apply to every socioeconomic strata and appear to be culturally universal. Importantly, the psychological and social benefits of physical activity do not depend on any particular physical ability or health status. They have been demonstrated in people with chronic pain, physical disabilities, serious mental and physical illnesses, and even among patients in hospice care. The joys described above—from hope and meaning to belonging—are linked first and foremost to *movement*, not to fitness.

The question of how physical activity contributes to human happiness is the central focus of this book. I started by scouring the science, skipping the countless surveys that show that people who exercise are happier, and searching instead for studies and theories that could shed light on why. I pored through academic papers in fields as wide-ranging as neuroscience, paleontology, and musicology. I talked to anthropologists, psychologists, and physiologists. I interviewed athletes and exercise professionals. ... I reached out to friends, family, and strangers, and asked them to share their experiences of movement. After nearly every one of these interviews, I found myself relistening to some part of the recorded conversation. Not just to check my notes, but because I wanted to hear their stories again. Many of the individuals I spoke with were brought to tears as they explained what movement meant to them. By the third time I found myself typing, ‘She teared up while telling me about this,’ I realized: These were tears of joy, and the joy of movement is moving.”

~ Kelly McGonigal from *The Joy of Movement*

I’m a big fan of Kelly McGonigal and her ability to help us apply scientific wisdom to our lives. We’ve covered two of her earlier books: *The Willpower Instinct* and *The Upside of Stress*.

So... When I got this book, I knew I’d enjoy it. But, I didn’t anticipate JUST how much I’d love it.

To put it in perspective, we have some great [Notes on Movement](#) (*Spark*, *Spartan Up!* and *No Sweat* among my favorites), but Kelly’s book will be our new go-to for the science of WHY exercise/movement is so essential to our well-being. It’s PHENOMENAL. (Get a copy [here](#).)

Reading about the SCIENCE behind stories of transformation (and how, as per the sub-title of her book: “Exercise Helps Us Find Happiness, Hope, Connection, and Courage”) made me that

“If you can’t fly, run. If you can’t run, walk. If you can’t walk, crawl. But by all means, keep moving.”

~ Martin Luther King, Jr.

much more clear on the power of what we're doing with all of our work focusing so much on Energy (especially with our Mastery and Coach programs).

And, I can't remember being brought to tears so many times reading a book. Kelly tells us that, as she wrote her book, she had a corkboard wall with ideas and pictures. I think I'm going to get my own corkboard wall so I can put [THESE pictures](#) on there. I've looked at them countless times and EVERY SINGLE TIME I get goosebumps and tears in my eyes (like I just did typing that) FEELING the power of a radiantly alive human being having fun (!) facing obstacles (in community!) and KNOWING that we're capable of more than we think.

(Then there's [THIS VIDEO featuring Team Optimize](#) making joyful magic as the second-largest team in Spartan history. :)

Of course, the book is packed with Big Ideas. As always, I'm excited to share a few of my favorites with some wisdom we can apply to our lives TODAY, so let's jump straight in!

HOPE MOLECULES AND HOW TO MAKE THEM

"In 1825, poet Samuel Taylor Coleridge wrote, 'Hope without an object cannot live.' Modern scientists have come to a similar conclusion: Humans crave concrete goals and thrive when pursuing specific aims."

~ Kelly McGonigal

"One of the first things I discovered is that the most common explanation of why exercise makes us happy is far too simplistic. The psychological effects of movement cannot be reduced to an endorphin rush. Physical activity influences many other brain chemicals, including those that give you energy, alleviate worry, and help you bond with others. It reduces inflammation in the brain, which over time can protect against depression, anxiety, and loneliness. Regular exercise also remodels the physical structure of your brain to make you more receptive to joy and social connection. These neurological changes rival those observed in the most cutting-edge treatments for both depression and addiction. The mind-altering effects of exercise are even embedded in your musculature. During physical activity, muscles secrete hormones into your bloodstream that make your brain more resilient to stress. Scientists call them 'hope molecules.'

Looking at the evidence, it's hard not to conclude that our entire physiology was engineered to reward us for moving. But why would human biology be so finely tuned to encourage us to be active? A reasonable first guess might have to do with the health benefits of exercise. Perhaps the brain is looking out for the body, making sure we stay active enough to ward off a heart attack. Yet this notion takes too brief a historical perspective on the value of physical activity to human survival. Your doctor might encourage you to exercise to better control your blood sugar, lower your blood pressure, or reduce your risk of cancer. But for most of human existence, the central purpose of movement was not to prevent disease. Physical activity was how we engaged with life. As neuroscientist Daniel Wolpert writes, "The entire purpose of the human brain is to produce movement. Movement is the only way we have of interacting with the world." This is why our biology includes so many ways to reward moving. At the most fundamental level, rewarding movement is how your brain and body encourage you to participate in life. If you are willing to move, your muscles will give you hope. Your brain will orchestrate pleasure. And your entire physiology will adjust to help you find the energy, purpose, and courage to keep going."

The first book that really sold me on the science of WHY exercise is so vital for our well-being is called *Spark*. It's written by a Harvard psychiatrist named John Ratey who provides a super-compelling case for "The Revolutionary New Science of Exercise and the Brain."

Ratey tells us: "I tell people that going for a run is like taking a little bit of Prozac and a little bit of Ritalin because, like the drugs, exercise elevates these neurotransmitters. It's a handy metaphor to get the point across, but the deeper explanation is that exercise balances neurotransmitters — along with the rest of the neurochemicals in the brain. And as you'll see, keeping your brain in balance can change your life."

I've referenced that quote countless times in my mission to sell the power of exercise as we Optimize our energy: "Exercise is like taking a little bit of Ritalin and a little bit of Prozac!"

I often combine that wisdom with [Tal Ben-Shahar](#)'s genius line that NOT exercising is like taking a DEPRESSANT! (And, I often encourage people to actually imagine popping a DEPRESSANT on those days they choose not to move/exercise!)

Kelly takes those high-level perspectives and goes *deep* into the *science* of how movement/exercise fundamentally change WHO we are/how we see the world/interact with others/etc.

It's super-powerful. Kinda like (Ritalin + Prozac) x Hope Molecules SQUARED.

The other thing I thought about as I read the book is my recent obsession with the TWO virtues that positive psychologists say are THE most highly correlated to well-being: What they call "Zest" (or what we call "Energy") and Hope.

The #1 virtue is actually ZEST. It's *fascinating* (!) to see that Optimizing our Energy-Zest is HOW we create our Hope Molecules. So, yah. The science of WHY movement/exercise is so powerful is SUPER strong. Check out the book for more details.

For now... How can YOU move Today in a way that brings you joy? Let's get on that. Have fun. High fives to you and your Hope Molecules. :)

HOW TO MAKE YOURSELF ANXIOUS, TIRED AND HOSTILE

"A meta-analysis of twenty-five randomized clinical trials concluded that exercise has a large and significant antidepressant effect among people diagnosed with major depressive disorder."

~ Kelly McGonigal

"In the United States, daily physical activity—as captured by an accelerometer—is correlated with a sense of purpose in life. Real-time tracking also shows that people are happier during moments when they are physically active than when they are sedentary. And on days when people are more active than their usual, they report greater satisfaction with their lives.

Other experiments in the U.S. and UK have forced moderately active adults to become sedentary for a period of time, only to watch their well-being wither. Regular exercisers who replace physical activity with a sedentary activity for two weeks become more anxious, tired, and hostile. When adults are randomly assigned to reduce their daily step count, 88 percent become more depressed. Within one week of becoming more sedentary, they report a 31 percent decline in life satisfaction. The average daily step count required to induce feelings of anxiety and depression and decrease satisfaction with life is 5,649. The typical American takes 4,774 steps per day. Across the globe, the average is 4,961."

That's from Chapter 1 which is called "The Persistence High."

You know that "runner's high" we hear so much about? Well, it's real. Only, it's DEFINITELY not restricted to just runners and it's a lot more powerful than just a few endorphins being released.

As Kelly says: *"Anything that keeps you moving and increases your heart rate is enough to trigger nature's reward for not giving up. There's no objective measure of performance you must achieve, no pace or distance you need to reach, that determines whether you experience an exercise-induced euphoria. You just have to do something that is moderately difficult for you and stick with it for at least twenty minutes. That's because the runner's high isn't a running high. It's a persistence high."*

Right before that passage above Kelly tells a story about the Hadza—a hunter-gatherer society in Tanzania whose *"survival depends on strategies similar to those that early humans relied on."*

Get this: *"On a typical day, the Hadza engage in two hours of moderate to vigorous activity, like running, and several more hours of light activity, like walking. There is no difference in activity level between men and women or between young and old. If anything, the Hadza become more active as they age. Contrast this to the United States, where the average adult engages in less than ten minutes of moderate to vigorous activity a day, and physical activity peaks at age six. If the Hadza lifestyle reflects what human bodies are adapted for, something has gone seriously awry for the rest of us."* <- Wow.

Alright. All of that is worth a repeat/recap/reflection.

The average Hadza is (moderately to vigorously) active for HOURS a day while the average American is active for TEN MINUTES per day.

And... Perhaps most shocking: *“The average daily step count required to induce feelings of anxiety and depression and decrease satisfaction with life is 5,649. The typical American takes 4,774 steps per day. Across the globe, the average is 4,961.”*

Which kinda begs the question: How many steps are YOU getting per day?! (I didn't know about the fact that scientists actually identified a THRESHOLD (!) for depression (yikes!) when we set our baseline target of 10,000 steps a day for our Heroic Coaches but now I'm even more bullish on the importance of bringing attention to a simple measure of movement!)

Then we have that study where they got active people to NOT move/exercise. What happened? They IMMEDIATELY became more anxious, tired, hostile and depressed. YIKES.

It's funny, because, having been a non-exercising and much more “anxious, tired, hostile and depressed” version of myself, I've often jokingly said that you couldn't PAY me to NOT exercise. As it turns out, the researchers conducting studies like that often ran into challenges finding people willing to not exercise! I'm not alone.

So... One more time. Back to you. You moving? Let's get those hope molecules flowing and that persistence high rocking. TODAY.

COLLECTIVE EFFERVESCENCE

“Their experiences paint a portrait of how humans maintain hope and momentum in the darkest moments. We endure by taking it one step at a time, by making space for suffering and joy to coexist, and with the help of others.”

~ Kelly McGonigal

“The feeling [she] describes is not reserved for rowing. It can be experienced anytime and anywhere people gather to move in unison: in marches or parades, at dance classes and nightclubs, while jumping rope on the sidewalk or practicing tai chi in the park, or when swaying and singing at church. In 1912, French sociologist Emile Durkheim coined the term *collective effervescence* to describe the euphoric self-transcendence individuals feel when they move together in ritual, prayer, or work. Durkheim believed that these activities help individuals feel connected to one another and to something bigger than themselves. We crave this feeling of connection, and synchronized movement is one of the most powerful ways to experience it.

The joy of collective effervescence helps explain why fitness friendships and sports teams feel like family; why social movements that include physical movement inspire greater solidarity and hope; and why individuals feel empowered when they join others to walk, run, or ride for a cure. As with the runner's high, our capacity for collective effervescence is rooted in our need to cooperate to survive. The neurochemistry that makes moving in unison euphoric also bonds strangers and builds trust. This is why moving together is one of the ways humans come together. Collective action reminds us that we are part of, and moving in community reminds us where we belong.”

That's from a chapter called “Collective Joy” in which Kelly walks us through the science (!) of how moving with others creates a deep sense of joy and unity and... I just love this phrase... *COLLECTIVE EFFERVESCENCE*.

Ever feel that sense of pure joy and sense of unity and family when moving with others?

It's funny because I read this book right after our Heroic Coach graduation weekend that featured 500+ of us doing a Spartan Race together. When I read this chapter (and the next one which was actually all about doing obstacle course races!) I nodded my head and said, “YES!!” Why? Because we JUST felt EXACTLY what Kelly describes!

For example, [this video of Team Optimize at the Spartan Start Line](#) makes me laugh and dance with joy every time I watch it. (And so does [that other video](#) I already shared!)

"One study tracked the daily movements and mood of over 20,000 adults, using the GPS on their smartphones.

After collecting over a million data points, the researchers concluded that people are happier in natural environments. And yet typical Americans spend 93 percent of their time indoors, creating what some call a nature deficit."

~ Kelly McGonigal

So... What's YOUR favorite group movement activity? Let's schedule your next session of it!!!
#collectiveeffervescence for the win!

P.S. Another way to boost your awesome? Exercise in nature. Scientists call it "green exercise" and its effects are astonishingly renewing—like nature's reboot!

HOW WE ENDURE

"One of the most celebrated moments of Olympic history took place at the 1992 games in Barcelona, when British runner and world-record holder Derek Redmond finished the 400-meter semifinals dead last. An injury had kept him from competing in the 1988 games in Seoul, and Barcelona was widely considered his opportunity to medal. If you watch a video of the event, here's what you'll see: Redmond starts strong, but fifteen seconds into the race, he clutches his right leg and slows to a hop. Two seconds later, he collapses onto the track. His first thought, he later explained, was that he had been shot in the back of his thigh. In reality, the violent pain was his hamstring muscle snapping off the bone.

By the time Redmond is able to stand back up, every one of his competitors has crossed the finish line. The race is over. Yet Redmond refuses to quit."

That's from one of the last chapters of the book called "How We Endure."

If you feel so inspired, I encourage you to spend a minute watching [this extraordinary video featuring Derek Redmond](#).

Quick story: After slowing down to a hop, Derek decided to continue to the finish. Then you know what happens? A man runs down from the stands and onto the track—pushing aside officials en route to Derek. That man is his father. The two of them finish the race together.

Kelly tells their story beautifully. And she makes the point that WHY we all love that scene so much (I challenge you to not get misty watching the video) is the fact that, ultimately, we endure most powerfully TOGETHER. We all need each other to show up as our best. Period.

OBSTACLES MAKE ME STRONGER (OMMS!)

"So much of the language we use to describe courage relies on metaphors of the body. We overcome obstacles, break through barriers, and walk through fire. We carry burdens, reach out for help, and lift one another up. This is how we humans talk about bravery and resilience. When we are faced with adversity or doubting our own strength, it can help to feel these actions in our bodies. Sometimes we need to climb an actual hill, pull ourselves up, or work together to shoulder a heavy load to know that these traits are part of us. The mind instinctively makes sense out of physical actions. When you embrace the metaphorical meaning of movements, you can literally sense the strength that is in you and the support that is available to you.

Human beings are also storytellers, and the stories we choose to tell shape how we think about ourselves and our world. One of the most powerful ways that movement can affect us is through its ability to change our most deeply held stories. Whether it's by plunging into a pool of muddy water, learning how to hold a headstand, or lifting more weight than you ever thought possible, physical accomplishments can change how you think about yourself and what you are capable of. Do not underestimate how significant such a breakthrough can be. When Araliya Ming Senerat was in her early twenties, she was depressed, living in a city far away from her family and friends, and unhappy at work. She made a plan to take her own life. The day she intended to go through with it, she went to the gym for one last workout. She deadlifted 185 pounds, a personal best. When she put the bar down, she realized that she didn't want to die. Instead, she remembers, 'I wanted to see how strong I could become.' Five years later, she can now deadlift 300 pounds."

"In The Lure of Long Distances, Robin Harvie notes that the word athlete derives from a Greek word for 'I struggle, I suffer.'"

~ Kelly McGonigal

" After that big stretch, it became easier to imagine something I had never really let myself believe. Not just that I could ring a cowbell fifty feet off the ground, but something even more reassuring. That when I found myself in a situation I didn't know how to get through on my own, an assemblage of family, friends, and even strangers might rally around me."

~ Kelly McGonigal

That's from a chapter called "Overcoming Obstacles" in which Kelly shares some super-inspiring stories of people overcoming obstacles in their lives.

Get this: Kelly actually uses obstacle course races to help bring the point home.

There's something magical about PAYING to face obstacles and then JOYFULLY going over and under and through all those obstacles to REALLY get the fact that life is SUPPOSED to be challenging. And that, as per [our OMMS mantra](#), obstacles LITERALLY make us stronger!

So... Right before we all loaded up on a fleet of buses to go do a Spartan Race together, I might have given a little pep-talk lecture. We chatted about Zest and Hope and all that.

And... We talked about the fact that THE #1 obstacle most of us face in our lives is the story about why we CAN'T do something. Which is why Spartan Race's slogan is "You'll know at the Finish Line." <- Know what? You'll know just how much more you're capable of.

But... First, you've got to get to the Starting Line! And be willing to stretch yourself out of your current comfort zone and imagine yourself doing more than you're currently capable of.

Which reminds me of George Leonard's wisdom from [Mastery](#). Leonard was an Aikido master. He said: *"It's instructive to watch the immediate surge of clarity and energy during training that comes from the simplest act of writing one's name on a notice."*

Which makes me wonder: Want to join Team Optimize as we have fun getting our collective effervescence on going for Spartan's all-time record with 1,000+ Optimizers doing the Race together? Awesome. Join us!!! Can't wait to give you and your daimon a high five!

Here's to the Joy of Movement and the exercise that help us find happiness, hope, connection and courage!

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Brian Johnson,
Heroic Philosopher CEO

P.S. That story about Araliya changing her story and saving her life reminds me of an amazing woman from our program who also had plans to end her life. She decided to *change* her life instead. [I've watched her video countless times and each time I'm moved to tears.](#)

P.P.S. Whenever I think of Wendy's story, I also think of Julie. She never thought of herself as an athlete. [Check her out now.](#) :)

If you liked this Note, you'll probably like...

[The Upside of Stress](#)

[The Willpower Instinct](#)

[Spark + Born to Run](#)

[Spartan Up!](#)

[Move Your DNA](#)

[Movement Matters](#)

[No Sweat + Presence](#)

[Natural Born Heroes](#)

About the Author of This Note

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Brian Johnson is the Founder + CEO of Heroic. He's spent half of the last 25 years as a Founder/CEO and the other half as a Philosopher. Brian loves integrating ancient wisdom and modern science to help YOU become the best, most heroic version of yourself so we can create a world in which 51% of humanity is flourishing by 2051. Learn more at [heroic.us](#).