Scientist Author Debunks Myths About Exercise And Sleep

With the pandemic, many people are turning to at-home workouts and walks in their neighborhoods. That's good, says *Exercised* author Daniel Lieberman. "You don't have to do incredible strength training ... to get some benefits of physical activity."

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For much of history, human beings needed to be physically active every day in order to hunt or gather food — or to avoid becoming food themselves. It was an active lifestyle, but one thing it didn't include was any kind of formal exercise.

Daniel Lieberman is a professor in the department of human evolutionary biology at Harvard. He says that the notion of "getting exercise" — movement just for movement's sake — is a relatively new phenomenon in human history.

"Until recently, when energy was limited and people were physically active, doing physical activity that wasn't necessarily rewarding, just didn't happen," Lieberman says. "When I go to these [remote African tribal] villages, I'm the only person who gets up in the morning and goes for a run. And often they laugh at me. They think I'm just absolutely bizarre. ... Why would anybody do something like that?"
Lost Art Of Bending Over: How Other Cultures Spare Their Spines
Lieberman has spent a lot of time with indigenous hunter-gatherers in Africa and Latin America, cataloging how much time they spend walking, running, lifting, carrying and sitting. He writes about his findings, as well as the importance of exercise and the myths surrounding it in his new book, *Exercised*.

"If you actually look at what our ancestors do, they walk about 5 miles a day, which turns out to be, for most people, about 10,000 steps," Lieberman says.

Lieberman notes that many people are moving less than they did before the pandemic. He says if 10,000 steps feels out of reach, it's OK to shoot for less —
just so long as you're focused on movement. Even fidgeting can keep your muscles engaged.

"The more we study physical activity, the more we realize that it doesn't really matter what you do," Lieberman says. "You don't have to do incredible strength training ... to get some benefits of physical activity. There's all different kinds of physical activity, and it's all good in different ways."
Exercised
Why Something
We Never Evolved
to Do Is Healthy
and Rewarding

Daniel E. Lieberman
On the demonizing of sitting as "the new smoking"
When I walk into a village in a remote part of the world where people don't have chairs or a hunter-gatherer camp, people are always sitting. ... Some friends and colleagues of mine actually put some accelerometers on some hunter-gatherers and found that they sit on average about 10 hours a day, which is pretty much the same amount of time Americans like me spend sitting.

So it turns out that I think we've kind of demonized sitting a little falsely. It's not unnatural or strange or weird to sit a lot, but it is problematic if, of course, that's all you do. As I started to explore the literature more, I was fascinated because most of the data that associates sitting a lot with poor health outcomes turns out to be leisure-time sitting. So if you look at how much time people spend sitting at work, it's not really that associated with heart disease or cancers or diabetes. But if you look at how much people sit when they're not at work, well, then the numbers get a little bit scary.

On the importance of "interrupted sitting"
Just getting up every once in a while, every 10 minutes or so just to go to the bathroom or pet your dog or make yourself a cup of tea, even though you're not spending a lot of energy, you're turning on your muscles.

Daniel Lieberman
Just getting up every once in a while, every 10 minutes or so — just to go to the bathroom or pet your dog or make yourself a cup of tea — even though you're not spending a lot of energy, you're turning on your muscles. And your muscles, of course, are the largest organ in your body — and just turning them on turns down inflammation. It uses up fats in your bloodstream and sugars in your bloodstream, and it produces molecules that turn down inflammation. So the evidence is that interrupted sitting is really the best way to sit. In hunter-gatherer camps, people are getting up every few minutes, to take care of the fire or take care of a kid or something like that. And that kind of interrupted sitting, as well as not sitting in a chair that's kind of nestling your body and preventing you from using any muscles, all that kind of keeps your muscles going and turns out to be a much healthier way to sit.
On how chairs with backs have contributed to our back pain
We all think that it's normal for a chair to have a seat back. But until recently, only really rich people — the pope or the king — had a chair with a seat back. Until recently, all human beings pretty much either sat on the ground or, if they did have chairs, they were stools or benches or things like that. ...
Get Fit — Faster: This 22-Minute Workout Has You Covered

The reason it matters for our health is that a seat back essentially makes sitting even more passive than just sitting on a bench or a stool because you lean against the seat back and you’re using even fewer muscles, even less effort to stabilize your upper body. And the result is that we end up having very weak backs. So there are a lot of muscles that we use in our backs to hold up our upper body, and those muscles, if we don’t use them, just like every other muscle in your body, they atrophy. And weak muscles then make us more prone to back pain. In fact, studies show that the best predictor of whether or not somebody gets lower-back pain — and most of us do get lower-back pain — is whether or not we have weak and, importantly, fatigable backs. I think sitting a lot on chairs with backrests contributes to that.

On the idea that running is bad for your knees
There's this kind of general idea out there that running is like driving your car too much — [that] it's wear and tear, and that running is highly stressful and it just wears away your cartilage, just like driving your car for a long period of time wears out your springs, for example. And that turns out not to be true. Study after study has shown that in terms of "wear" — by which we really mean arthritis, degeneration of the cartilage in your joints — that people who run more are not more likely to get arthritis in their knees. In fact, they're actually slightly less likely to get arthritis, because using your cartilage, using your joints, using your muscles, strength, all the good benefits from physical activity actually turn out to be slightly protective.

That said, it's also true that the most common site of injury for runners is their knees. But a lot of those injuries, I think, are preventable by learning to run properly. We don't treat running as a skill in our culture. We just give people shoes and tell them to head out the door, and some people run really well and some people don't run that well — or their bodies aren't really well-adapted to running, and then they get into trouble. But in terms of wear and tear, I think we can dispel that myth completely.

**On becoming frail with age**

I think one of the most important points about physical activity is that as we age, it becomes not less but more important to be physically active. Muscle atrophy is the perfect example.

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We have this notion that as you get older, you retire, you go to Florida, you kick your feet up on the beach or whatever. ... We have plenty of evidence that older individuals in America are less physically active and they do fewer activities that involve strength. And one of the really sort of serious negative consequences of that is that our muscles dwindle, they atrophy. There's a technical term for that, which I think is illuminating — it's called "sarcopenia." Sarco means "flesh" in Greek and penia means "loss" — so "flesh loss." But basically it's frailty. And as we get older and become more frail, a vicious circle sets in because because we walk more slowly, it's harder to get out of a chair and that makes us even less likely to be physically active, which keeps that cycle going. So that's the bad news.
DEATH OF RUTH BADER GINSBURG
Ginsburg's Trainer Honors Late Justice With Pushups At Capitol Hill Memorial

But the good news is that it doesn't take a huge amount of physical activity to kind of reverse that, turn it around. Think about Ruth Bader Ginsburg. She was celebrated for her vim and vigor, which meant that a lot of that came from the fact that she kept working out and as she got older, she went to the gym several times a week. Now, she didn't do crazy, "pump iron" stuff. She wasn't trying to be like Arnold Schwarzenegger. But she did a few rounds of weight training every week and that helped keep her marvelously active and vigorous up until her late 80s. And the mechanisms that get turned on when we do a little bit of strength training don't diminish with age. So if you're in your 80s or 90s and you do a little bit of strength training, you'll still get enormous benefits.
On the stress around getting eight hours of sleep a night
It turns out that people who live in places where there is no electricity and there no iPhones and there's no TV, turns out they don't sleep any more than the average American.

Daniel Lieberman

I used to say this to my students, that Thomas Edison robbed us of sleep. We invented electricity, and now we have iPhones and televisions and all these things that keep us up at night and that we didn't used to do. But it turns out that people who live in places where there is no electricity and there no iPhones and there's no TV — turns out they don't sleep any more than the average American. I think the number is 6.7 to 7.1 hours on average at night. And they often don't nap either, by the way, which is something we're also told. If you look at the data, there's no evidence that people [on average] sleep less today than they used to.
And furthermore, to my astonishment, when you look at big epidemiological data sets where you graph how much you sleep on the horizontal axis and your health outcomes on the Y axis, it's a U-shaped curve. And the bottom of that curve is about seven hours. Of course, there's a lot of variation. Some people need more, some people need less.
So I think sleep is another one of those examples of how we make people exercise. We make them stressed about what they should be doing, and there's a lot of "virtue signaling" going on. If you tell somebody they're not getting enough sleep and they actually are getting enough sleep, you just make them stressed ... that elevates cortisol. Cortisol is the hormone that's about arousal. Cortisol prevents you from sleeping. And so we get into this kind of vicious circle.

So, while it's true that people who don't get enough sleep, that can be a problem, getting three, four, maybe five hours of sleep a night can be detrimental and it's an issue ... if you're getting six, seven hours of sleep and you feel fine, I think we should all relax and stop being so uncompassionate to each other.
Sam Briger and Seth Kelley produced and edited this interview for broadcast. Bridget Bentz, Molly Seavy-Nesper and Deborah Franklin adapted it for the Web.