



SUNDAYREVIEW | OPINION

# Fitness Crazyed

By DANIEL DUANE MAY 24, 2014

SAN FRANCISCO — I'M no scientist, but I sure like reading about science. I'm always looking through newspapers for the latest research about saturated fat and whether it's still bad for you, or if maybe sugar is poison.

So when I found myself 40, fat and weak, I paid special attention to exercise science articles, in the hopes of getting strong. I found stories about cutting-edge studies that claimed you should do intense, brief workouts instead of long ones.

I hired personal trainers certified by the National Academy of Sports Medicine in a training methodology “founded on scientific, evidence-based research.” They taught me to avoid cave man barbell lifts like squats in favor of tricky new exercises on wobble boards and big inflatable balls to stimulate my body's core.

I learned about the science of muscle confusion — central to infomercial workouts like P90X, from beachbody.com. It's a little hard to understand, but the idea seems to be that you change routines constantly, so that your muscles continue to adapt.

I had fun doing these workouts. Sometimes, when I stood naked in front of the mirror, I thought I looked better. Mostly, though, I looked the same. I mentioned this to an excellent trainer named Callum Weeks, in San Francisco. Mr. Weeks suggested that I focus on one aspect of fitness for a while, maybe strength. So I poked around Amazon and found “Starting Strength: Basic Barbell Training,” written by Mark Rippetoe, a gym owner in Wichita Falls, Tex.

The program sounded like an unscientific joke. It called for exactly three workouts per week, built around five old-fashioned lifts: the squat, dead lift, power clean, bench press and standing press. But the black-and-white photographs were so poorly shot, and the people in them were so clearly not fitness models, that it seemed legit.

The book came in the mail and then I went to the gym and, per Mr. Rippetoe's instructions, did three sets of five reps in the squat, dead lift and standing press. Then I went home and drank milk. Two days later, I did three sets of five in the squat and the bench press. I repeated this basic pattern, alternating the dead lift with the power clean, for a year, adding a little more weight to the bar in every lift, during every session.

Now for the astonishing part: It worked. I was able to lift a tiny bit more every single time, like magic — or, rather, like Milo of Croton, the ancient Greek wrestler who is said to have lifted a newborn calf and then lifted it every day thereafter, as it grew, until Milo carried a full-grown bull. In my own case, I eventually squatted 285 pounds, dead-lifted 335 and bench-pressed 235. Those numbers will not impress strength coaches — I weighed 215, after all — but they were a marvel to me.

This raised a question: If all the latest cutting-edge scientific research says that outdated barbell movements have to be updated with core stability tricks and then integrated into super-short high-intensity muscle-confusion routines, how come none of that did much for me, while the same five lifts repeated for a year caused profound structural changes to my body?

The answer, it turns out, is that there are no cutting-edge scientific studies.

I don't mean that exercise physiologists don't conduct brilliant research. They do. I mean that they rarely research the practical questions you and I want answered, like which workout routine is best.

"A lot of physiologists come into the discipline because they fundamentally like exercise," Martin Gibala, an exercise physiologist at McMaster University in Ontario, told me. "But you learn very quickly that

there's not a lot of research money out there to fund applied studies." On matters as simple as how many sets and reps best promote muscle growth, Mr. Gibala explained, "We can't nail down the answer."

Even if the funding were there, Mr. Gibala says, "That's not state-of-the-art research that you're going to publish in the best journals and advance your career." Instead, he says, physiologists study questions of basic science, "like the molecular signaling proteins that regulate skeletal muscle adaptation."

You know, those.

Of course, Mr. Gibala and his peers are not the problem. The problem is that everybody in the fitness industry grabs onto this basic science — plus the occasional underfunded applied study with a handful of student subjects — and then twists the results to come up with something that sounds like a science-backed recommendation for whatever they're selling. Most gym owners, for example, want you to walk in the door on Jan. 2 and think, Hey, this looks easy. I can do this. So they buy stationary cardio and strength machines that anybody can use without hurting themselves, often bearing brand names like Sci-Fit (Scientific Solutions for Fitness), which might more accurately be described as scientific solutions for liability management.

As for personal trainers, I've known great ones. But the business model is akin to babysitting: There's no percentage in teaching clients independence by showing them basic barbell lifts and telling them to add weight each time. Better to invent super-fun, high-intensity routines that entertain and bewilder clients, so they'll never leave you. The science of muscle confusion, in other words, looks a lot like the marketing tradecraft of client confusion.

THEN there's the matter of our collective cravings. From cable news to the nation's great newspapers, there is a tacit understanding that in fitness stories you and I want to hear variations on exactly one theme: that a just-published research paper in a scientific journal identifies a revolutionary new three-and-a-half minute workout routine guaranteed to

give you the body of an underwear model. So powerful is this yearning — this burning ache to look good naked and have great sex and live forever — that even the best-intentioned of fitness journalists scour every little academic study for anything that might justify telling you that same sweet story, one more time.

Steven Devor, an exercise physiologist at Ohio State University, says that people in his profession have become painfully aware of this problem. “A lot of my colleagues would rather poke themselves in the eye than talk to the media,” he says.

The real harm, however, is caused when this fog of misinformation distracts from a parallel truth. Namely, that athletic coaches the world over conduct applied research all the time, and know precisely how to get people fit. If you train for a sport, you already know this, whether you realize it or not. Anybody who has trained for a marathon, for example, knows that regardless of what some TV fitness reporter says about some uncontrolled observational study with 11 elderly subjects somewhere in Finland, the web abounds with straightforward marathon-training plans that go like this: Every week for several months, take a few short runs midweek and a single long run on the weekend. Make sure the long run gets a little bit longer each time. Before you know it, you’ll be able to run 26.2 miles.

Those plans works for the same reason Mr. Rippetoe’s protocol works: The human body is an adaptation machine. If you force it to do something a little harder than it has had to do recently, it will respond — afterward, while you rest — by changing enough to be able to do that new hard task more comfortably next time. This is known as the progressive overload principle. All athletic training involves manipulating that principle through small, steady increases in weight, speed, distance or whatever.

So if your own exercise routine hasn’t brought the changes you’d like, and if you share my vulnerability to anything that sounds like science, remember: If you pay too much attention to stories about exercise research, you’ll stay bewildered; but if you trust the practical knowledge of

established athletic cultures, and keep your eye on the progressive overload principle, you will reach a state of clarity.

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