

# THE CrossFit JOURNAL

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# WEIGHT A SECOND: BALANCE AND THE BAR

Mike Burgener offers quick tips to correct errors in the snatch and clean and jerk.



BY MIKE WARKENTIN





Thomas Campitelli/CrossFit Journal

Most of us have seen the guy who can do a kettlebell swing with a 300-lb. barbell. The lift is actually called a clean, but it lacks the grace and speed evident when skilled lifters pull their bodies around and under a perfectly placed bar with lizard-like speed.

While ugly, the swinging clean is impressive because the lift likely requires more raw strength than cleaning 300 lb. properly. But it's really the equivalent of using a sledgehammer to drive a finishing nail into a cabinet, and the lifter would no doubt be able to move larger loads more quickly if he or she put them in the right place with efficient mechanics.

While it's tempting to immediately attribute the error to an early scoop, Mike Burgener of CrossFit Weightlifting suggests coaches pay more attention to athlete positioning before the bar even leaves the floor.

"One reason athletes jump forward is because of their setup," he said.

Burgener said he teaches athletes to have the balance of their weight on the mid-foot, with a subtle shift just behind mid-foot as the knees get out of the way of the bar during the first pull.


If athletes do not balance their weight properly in the setup, it's very difficult to get the bar in the correct spot. If the weight is too far back toward the heel, it can be impossible to get the knees out of the way—a fact that sometimes sends very aggressive pullers limping to the first-aid kit with trickles of blood running down their shins.

If the weight is too far forward toward the ball of the foot, the hips often shoot upward during the first pull and pressure increases in the forefoot. At that point, it's very inefficient and nearly impossible to get the weight back in the right spot, and the "lifter" is more accurately a passenger who's going to have to employ brute strength and a bit of luck to find a way under a barbell that's flung away from him or her. The bar is, in effect, pulling the athlete—not the other way around.

"When they go to jump that barbell or explode that barbell, the bar goes way out in front and they have to go jump forward to get it," Burgener said.

To fix the error, Burgener said he makes sure the athlete has the weight centered in the middle of the foot from the setup to the end of the first pull. When the bar is at the knees, the weight is balanced from the middle of the foot to slightly back of mid-foot. That balance would ensure a coach could neither pull nor push an athlete forward or back at the hang position.





Rocking back on the heels is an error that's sometimes caused by overcompensation when athletes are cued to keep the weight back.

Thomas Campitelli/CrossFit Journal

“If ... the weight is on the balls of the feet off the ground to mid-thigh and I went to pull him, he'd be automatically pulled forward. And if I wanted to push him (from behind), the same thing would take place,” Burgener explained.

The coach said some athletes need to be cued to put the weight back on the heels—an exaggeration that sometimes helps drive home the point. But it's also not uncommon for the “weight back” cue cause athletes to pull their toes off the floor and place all the weight on the heels. That error also leads to a lack of balance, and overcompensating athletes should be cued to keep the weight centered.

Finally, some athletes who get the weight in the right spot don't keep it there long enough, shifting forward when the weight should be held back just behind mid-foot.

“Now he's rolling on the balls of his feet too soon ... and he's not letting that bar clear his knees. He's not staying back and he's not driving off the full foot. He's trying to go too fast, and as soon as he starts extending the hips the weight shifts too much forward, and now he's not going to be able to get that adequate finish without swinging the bar.”

Burgener has often said 90 percent of all missed lifts are attributed to the feet, but it's something that's easy to forget when athletes start moving and barbells and body parts distract the eye.

Coaches are encouraged to evaluate lifters like a builder evaluates a house: If the roof is crooked, make sure the foundation is level. ■

**About the Author** Mike Warkentin is managing editor of the CrossFit Journal and founder of [CrossFit 204](#).





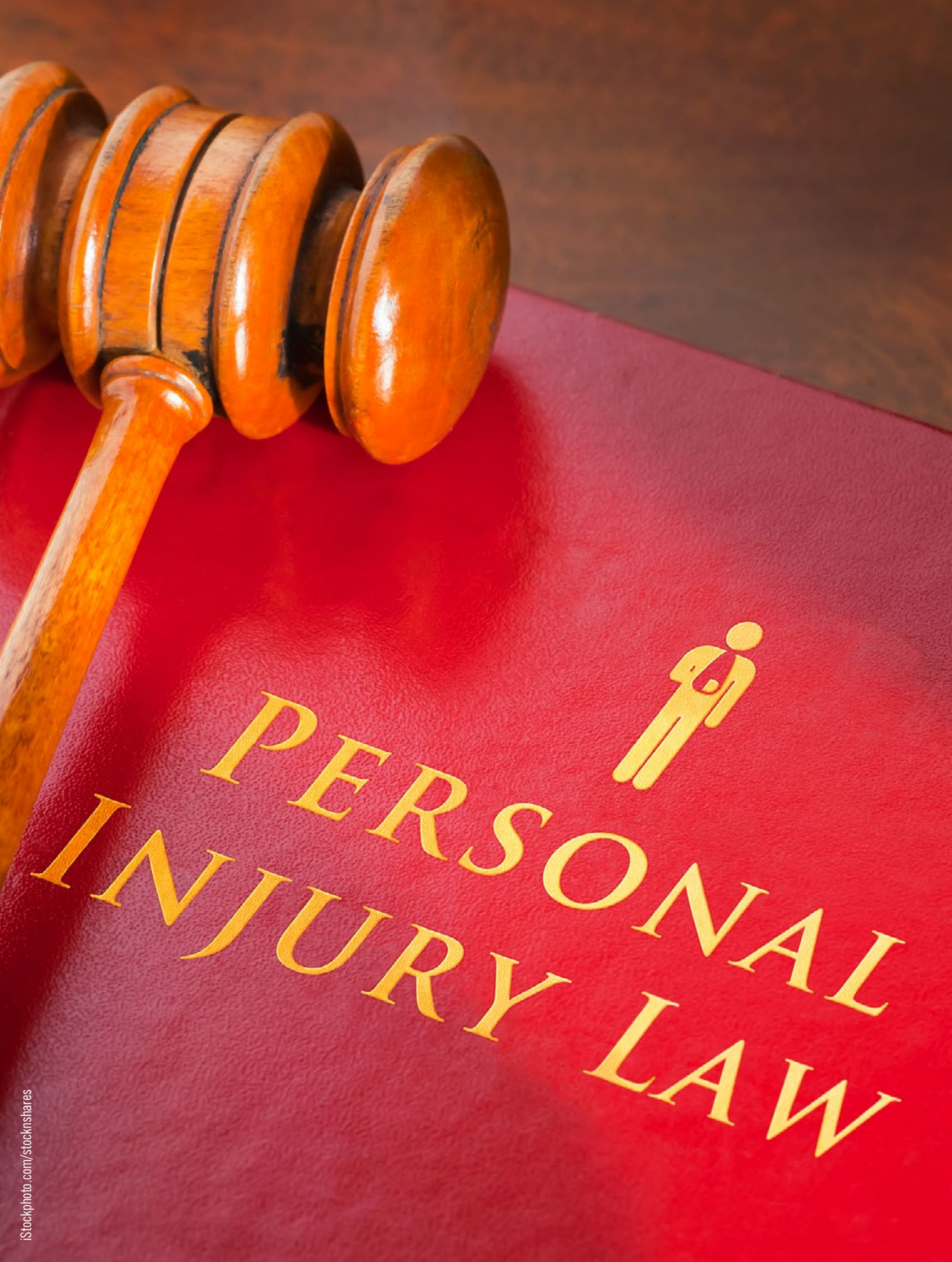
THE **CrossFit** JOURNAL

# CROSSFIT INC. VICTORIOUS IN TEXAS

CrossFit RRG helps John McPherson and P3 CrossFit set precedent by fighting off rhabdomyolysis lawsuit.

BY RUSSELL BERGER





In September 2011, Adam Gottlieb walked into P3 CrossFit, John McPherson's affiliate in Houston, Texas. Under the supervision of one of P3's trainers, Gottlieb performed a free introductory workout that consisted of a 500-m row, 40 air squats, 30 sit-ups, 20 push-ups and 10 pull-ups. Gottlieb became nauseated during the session and vomited, but he finished the workout and went home.

Later that day, he was admitted to the hospital, and he was released four days later with a differential diagnosis that included "exertional rhabdomyolysis."

Almost a year later, Gottlieb filed a lawsuit claiming John McPherson of P3 CrossFit and CrossFit Inc. were guilty of gross negligence.

In many ways this is a simple story. A pair of personal-injury attorneys saw CrossFit as a ripe target, so they crafted a story of personal loss and hardship caused by a reckless and indifferent fitness company and its affiliate. They filed suit, the suit went to trial, and they lost.

But to anyone with a vested interest in the health of the CrossFit community, the story is much larger: This lawsuit was the first of its kind, and our anticipation of its arrival included setting up our **Risk Retention Group (RRG)** in 2009.

Commercial insurers might have cut costs by settling this claim rather than fighting it because they have no interest in defending the CrossFit name and program. They simply want to minimize losses, and settlements often cost less than going to trial. This approach would have set a dangerous precedent that would have opened affiliates up to attack from unscrupulous individuals who see easy money on the table.

CrossFit and the RRG were ready for the lawsuit and fought for a ruling that would preserve CrossFit's reputation and deter additional attacks. By responding immediately and vigorously, the RRG ensured the correct precedent was set for the future.

#### Prepared, Backed up and Insulated

McPherson, a former Army Special Forces soldier, was medically discharged after a parachute accident broke bones in both feet and one ankle. As a civilian, McPherson began his career as a CrossFit affiliate owner in 2007, pursuing education and improving the excellence of his services with the same focus that led to his becoming an elite soldier. While seeking to improve his skills as a trainer, he attended multiple CrossFit specialty courses and the original CrossFit Level 2 Certificate Course. He also earned the Certified CrossFit Level 3 Trainer credential. McPherson is now one of less than a hundred Certified CrossFit Level 4 coaches in the world.

As an affiliate owner, McPherson developed detailed systems and checklists for bringing new trainers on board, tracking client performance, and running free introductory training sessions. The liability waiver he had all prospective clients sign even included references to rhabdomyolysis. When I learned this, I recalled my own experience of throwing liability waivers into an unorganized mess in the corner of my gym. McPherson kept his records organized and easily produced Gottlieb's signed waiver when it mattered most.

What Gottlieb's lawyers wanted from McPherson was an illiterate ex-military grunt with little regard for his trainees' health and safety. What they got instead was one of the most qualified, organized and prepared trainers in the world. In short, McPherson didn't just prevail in this lawsuit because the claims against him were false; he prevailed because he did everything right.

McPherson didn't just prevail in this lawsuit because the claims against him were false; he prevailed because he did everything right.

#### Judge, Jury and Trainer

On the morning of March 7, we walked into the courtroom of the 127th District Court in downtown Houston, Texas. The presiding judge was Ravi K. Sandill, a relatively young judge with a sharp wit and a decent following on Twitter and Facebook. The morning consisted of the laborious process of deselecting potential jurors for bias. Our lead attorney, Steve Selbe, asked friendly questions about each juror's knowledge and feelings about CrossFit, exercise and injuries as his associate Andrew Scott and I took notes.

As I quickly learned, this step in the process is vital. Simply asking this question caused at least one hand to go up: "Has anyone here read anything in the news that has caused them to have a negative view of CrossFit?" On the other side, the plaintiff's attorneys worked to remove anyone from the jury pool who expressed a cynical view of personal-injury lawsuits in general.

With our jury chosen, the plaintiff's counsel took the floor for opening statements. This phase of the trial was particularly



important for understanding the arguments that side would make over the next few days. Gottlieb’s attorneys presented their client as an unsuspecting victim of P3 CrossFit’s trainers—trainers they claim failed to follow CrossFit’s published guidelines on preventing exertional rhabdomyolysis. They claimed that as a “former athlete” Gottlieb fit the profile of someone at risk for developing rhabdomyolysis (based on the information published in the “CrossFit Level 1 Training Guide”). Gottlieb’s attorneys also argued that P3 CrossFit failed to follow CrossFit’s recommendations to gradually expose new athletes to high-intensity training.

Of note, Gottlieb’s original complaint included the accusation that CrossFit was aware of an “extreme risk” associated with “poorly designed workouts” and acted in “indifference” to this knowledge. They claimed we chose to “maximize profits” instead of engaging in “basic supervision or auditing” of our affiliates. These arguments were almost completely absent from the trial as Gottlieb’s attorneys focused on the supposed failure of P3 to meet CrossFit’s published standards. It’s my suspicion the plaintiffs realized the self-defeating nature of trying to argue CrossFit is indifferent to the risk of rhabdomyolysis while building a case that relied entirely on the published warnings and guidelines CrossFit has produced for its trainers.

Gottlieb’s medical records indicated that the rhabdomyolysis he experienced wasn’t present until days after his workout and was likely caused by a viral infection.

In our opening statements, Selbe laid out the framework of our defense of P3 CrossFit. First, Gottlieb had signed a release of liability that specifically mentioned rhabdomyolysis. Second, Selbe told the jury that he intended to show that the workout employed by P3 was completely safe and no reasonable person could have foreseen what happened to Gottlieb. Third, Selbe introduced a significant fact to the jury: Gottlieb’s medical records indicated that the rhabdomyolysis he experienced wasn’t present until days after his workout and was likely caused by a viral infection.

Over the next two days the plaintiff’s attorneys called their



witnesses to the stand. The first was Gottlieb’s personal physician, an older gentleman who claimed to have tested Gottlieb for a viral infection after he was released from the hospital and concluded that he did not have one at that time. Selbe’s cross-examination of the physician revealed that this did not mean Gottlieb didn’t have a virus in the days prior.

Next was Gottlieb himself, who gave his account to the jury. Gottlieb was careful to describe his athletic background in detail. Approximately 10 years prior to his introductory workout at P3 CrossFit, he attended a rowing camp. From that time onward, he played recreational lacrosse, and he admitted he did nothing to stay in shape for a little over a year prior to walking into P3. Gottlieb’s attorneys wanted to establish for the jury that this fact made Gottlieb a “former athlete.” They insisted this was the risk factor CrossFit had in mind when it published warnings against too quickly exposing those in generally good shape to CrossFit levels of intensity.

Of note, Gottlieb mentioned that he had received a phone call from McPherson while in the hospital. “It was awkward” Gottlieb said, “because at that point I wasn’t sure if this might end up in a lawsuit or not.”

As it turns out, Gottlieb, who never received a true diagnosis of exertional rhabdomyolysis, was searching for articles about CrossFit and exertional rhabdomyolysis from his hospital bed—and he was already considering suing McPherson.

“Mr. Gottlieb, you said you didn’t speak to a lawyer until six months after your hospitalization, but that’s not true, is it? Don’t you see a lawyer every night?” Selbe asked during cross-examination.

“Yes,” Gottlieb replied. “My wife is a lawyer.”

Unfortunately for Gottlieb, his treating nephrologist, Dr. Michael Campbell, was not so quick to blame CrossFit for Gottlieb’s kidney injury. The plaintiff’s counsel read a handful of excerpts from Campbell’s deposition, and then our attorneys read their own chosen excerpts. Campbell made it very clear that in his medical opinion Gottlieb’s kidney injury had nothing to do with the stress of the introductory workout: He believed Gottlieb’s condition was better explained by an underlying viral or bacterial infection.

As his medical records confirmed, Gottlieb presented at the hospital with fever, chills, no muscular pain and complaints of vomiting. He was treated with antibiotics and didn’t show blood

Dr. Campbell made it very clear that in his medical opinion Gottlieb’s kidney injury had nothing to do with the stress of the workout.

markers consistent with rhabdomyolysis until his third day after the workout.

Next, McPherson was called to the stand. While I have always enjoyed the stresses of defending the CrossFit brand under oath, McPherson was dealing with a different set of circumstances: The reputation of his business and his reputation in the CrossFit community as a whole were on the line. The plaintiff’s counsel began questioning him, clearly trying to box him into a corner with his own words. In one line of questioning, their obvious goal was getting McPherson to agree that 15 to 20 minutes of working out would be “difficult,” implying that he must agree it was enough to give someone rhabdomyolysis. McPherson wasn’t going to let that happen. Every time they would reframe the question, McPherson would answer, “That depends—20 minutes of what?”

The Plaintiff’s attorney tried again: “Mr. McPherson, what kind of activity done for 20 minutes would you say was long and difficult?”

“To be honest, listening to you ask me the same question over and over again for the past 20 minutes has been extremely difficult,” McPherson responded bluntly.

The judge immediately intervened, ordering Selbe to instruct McPherson to remain respectful or risk having his entire testimony struck from the record. Selbe complied, and McPherson quickly straightened up.

It’s a poor time to lose your temper when sitting on the witness stand while your reputation is on trial, but the crack in McPherson’s otherwise-professional demeanor demonstrates the level of stress he was under throughout the entire lawsuit.

“It has worn me down,” McPherson told me later. “I’ve had sleepless nights. I’ve second-guessed my gym’s methods and efforts ... it has exhausted me.”

He was angry, and rightfully so.



CrossFit’s Defense

By March 9, it was our turn to begin calling witnesses to the stand. While each of our witnesses played his part in our defense, two were particularly invaluable. First was Andy Petranek.

As a one of the first affiliate owners in the country, Petranek has a unique perspective and understanding of the CrossFit



Andy Petranek, seen competing at the 2009 CrossFit Games, created the introductory workout Gottlieb performed at P3 CrossFit.

methodology. He is also the author of the workout McPherson uses with his new clients. Our attorneys played a video recording of Petranek’s deposition to the jury, who immediately began chuckling at his tics and no-BS answers.

Petranek confirmed that the workout was a gradual introduction to intensity and cited the thousands of athletes he had put through it without a single significant medical issue resulting. When asked if CrossFit had a “dirty little rhabdo secret”—referencing the 2013 blog post by a similar title—Petranek laughed uncontrollably.

“No one was talking about rhabdo before CrossFit,” he said. “Anyone who says they are trying to hide something about rhabdo

has no idea what they are talking about.”

Petranek’s demeanor was disarming, the jury liked him, and it was clear nobody was paying him for his opinion.

We next called to the stand Holden MacRae, professor of sports medicine at Pepperdine University. Scott went over MacRae’s academic accomplishments, degrees and awards, firmly establishing his remarkable credibility in the academic world of exercise science. I’m not sure if it was this credibility or MacRae’s South

Selbe then produced a poster-board-sized copy of the portion of Dr. Campbell’s testimony in which he indicated that something viral had caused Gottlieb’s kidney injury.

African accent that the jury responded to, but we could see from their faces that they liked him.

MacRae testified that in his opinion the workout was perfectly reasonable for new clients and fit the bill for a safe first-time exposure to CrossFit training.

“I would be shocked if someone developed exertional rhabdo from completing this workout,” MacRae said, furthering our argument that P3 could not have foreseen Gottlieb’s injury and thus could not be guilty of negligence in his training.

In the plaintiff’s closing argument, we heard much of the same. CrossFit Inc. was barely mentioned. The plaintiff’s counsel had abandoned going after CrossFit directly and was leaning entirely on the narrative that P3 failed to heed CrossFit’s recommendations for reducing the risk of rhabdomyolysis in new clients.

In our closing arguments, Selbe reminded the jury of the expert testimony that the introductory workout constituted a safe and reasonable first exposure to CrossFit levels of intensity and therefore could not have been the sole cause of Gottlieb’s rhabdomyolysis. Selbe then produced a poster-board-sized copy of the portion of



John McPherson, Holden MacRae, Steven Selbe, Andrew Scott and Russell Berger (l-r) with a display copy of the waiver Gottlieb signed before working out at P3 CrossFit. Mention of rhabdo-myolysis is highlighted.





Rob Wilson

The CrossFit RRG exists to protect affiliates from lawsuits that would damage the brand. Affiliate owners are encouraged to educate themselves so they're prepared when threats arise.

Dr. Campbell's testimony in which he indicated that something viral had caused Gottlieb's kidney injury. He also produced an enormous copy of Gottlieb's signed liability waiver.

The jury was released to deliberate just before lunch. Scott, McPherson and I walked a few blocks to a local barbecue joint and ate. We were all mentally and physically exhausted and had no idea how long we would have to wait for a verdict.

Shortly after we returned to the courthouse, we had our answer. The judge called the jury into the room and read its verdict aloud. CrossFit P3 and CrossFit had prevailed against all claims.

Justice felt good, but I knew it must have felt even better for McPherson. I shook his hand and then our lawyers' hands. We then did what anyone in our position would have done: We took a group photo for Instagram.

Always Prepared

As stated earlier, the RRG was created with exactly this type of lawsuit in mind: The RRG exists to defend our affiliates from legal threats that commercial insurance companies have no financial motivation to defend. Commercial insurers often settle a case whenever the cost of defense exceeds the immediate cost of settlement. Such an insurer likely would have settled with Gottlieb.

If this had happened, personal-injury attorneys everywhere would smell blood in the water, and the precedent set by a settlement would likely lead to a barrage of similar lawsuits aimed at affiliates around the globe. In contrast, the RRG is willing to protect the CrossFit brand, and individual affiliates, even if it costs more in the short-term.

The Gottlieb lawsuit represents the first courtroom battle fought and won by the RRG in the defense of our community's reputation, and it's a big win for the CrossFit community as a whole.

It also represents the first time the CrossFit Level 1 credential has been challenged in open court. CrossFit training materials, instruction and methodology were put on trial, and we prevailed. CrossFit's critics have long claimed the CrossFit Level 1 Trainer Course fails to sufficiently prepare attendees for safe and responsible training, but the evidence against this claim was devastating to the plaintiff's position. Opposing counsel were forced to abandon their initial argument on the insufficient quality of the Level 1 credential, and they instead built their entire case against P3 CrossFit on the assumption that CrossFit clearly and effectively communicates its rhabdomyolysis-prevention standards to all Level 1 trainers. It was a losing position: McPherson was well aware of the risk of rhabdomyolysis and took all reasonable steps to prevent it, including mentioning the condition in his waiver and

selecting an appropriate introductory workout.

Though this case has set a powerful precedent for similar lawsuits, history often repeats itself. While this particular story is about McPherson and P3 CrossFit, it could have been a story about any one of our thousands of affiliates. Just as we drill our training partner for tips and advice after she completes the Open workout we are about to attempt, we should look to this case as an example of how to prevail in the face of a very real threat.

When Gottlieb's attorneys stepped up to swing at the CrossFit piñata, they didn't just miss—they were beaten with their own bat. Our affiliates need to know how we prevailed so we can continue to prevail when others seek to damage our community. ■

**About the Author** Raised in Atlanta, Georgia, Russell Berger spent four years in 1st Ranger Battalion. After leaving the military in 2008, he opened CrossFit Huntsville, where he spent three years as head trainer. He now works full time for CrossFit Inc.



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# GARY TAUBES: PROSECUTING SUGAR

The award-winning author sat down with Andréa Maria Cecil to talk about his career, his upcoming book and the task of correcting nutrition science.

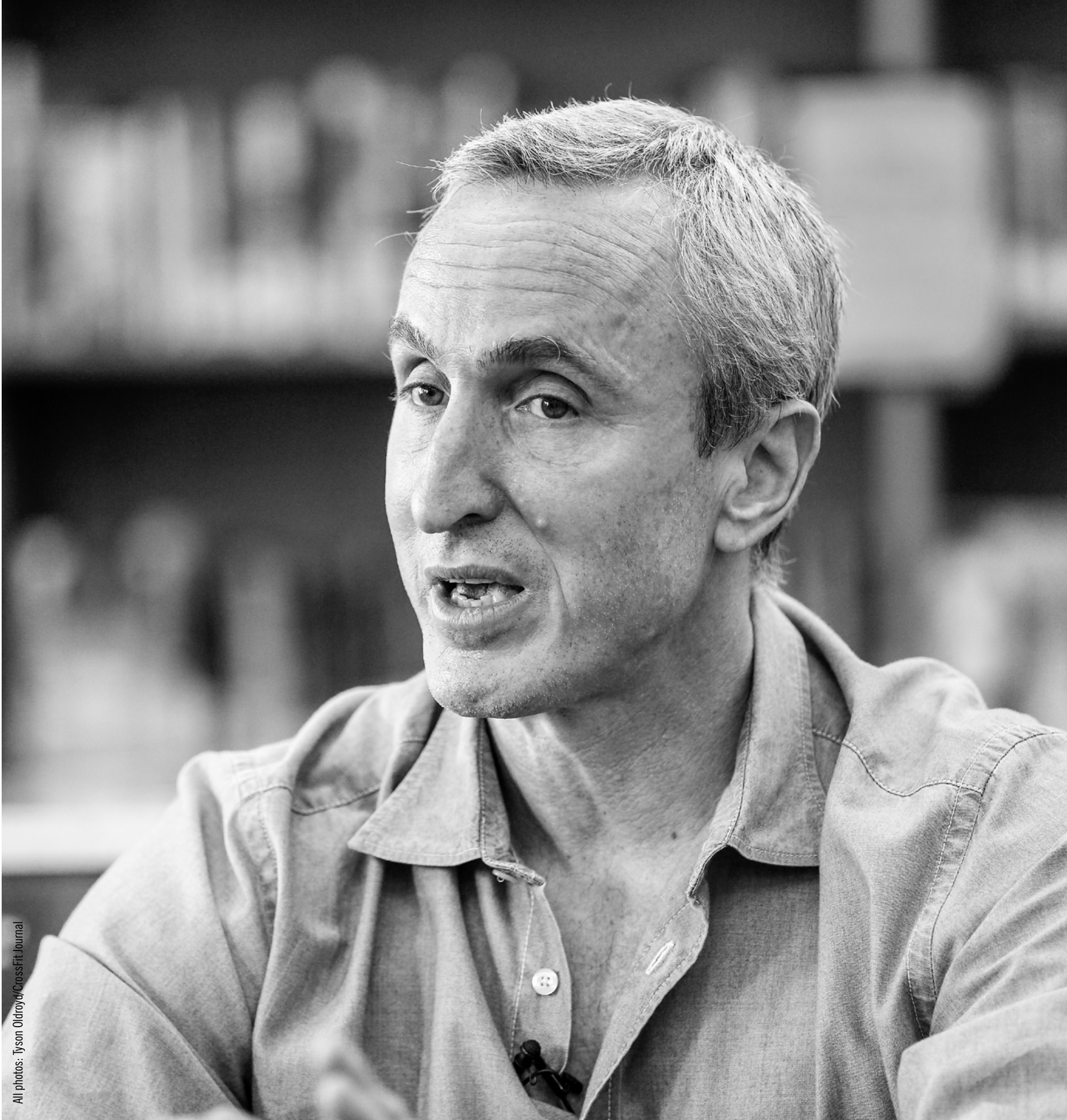
BY ANDRÉA MARIA CECIL

It took six years and countless reclusive hours for investigative science journalist and best-selling author Gary Taubes to finish his latest book: “The Case Against Sugar.”

He calls it “a prosecutor’s argument.” The work opens by examining whether sugar should be perceived as a food or a drug. Taubes is now fact-checking the book before publication.

The 59-year-old native New Yorker who today lives in Oakland, California, also penned the oft-cited “Good Calories, Bad Calories” and “Why We Get Fat.” He’s won the Science in Society Award of the National Association of Science Writers three times and was awarded an MIT Knight Science Journalism Fellowship for 1996-97.

I first talked to Taubes in August 2015 for an article focused on the folly of basing a human being’s nutrition plan on [the calories-in-calories-out law of thermodynamics](#). The age-old equation assumes the metabolic effect of all calories is created equal—regardless of whether they come from chicken, olive oil or Twinkies. The problem with that is human beings aren’t incinerators.



All photos: Tyson Oldroyd/CrossFit Journal



The very next month, I talked to Taubes again, this time about [the vilification of dietary fat](#). He was a great interview—a perpetual skeptic with an affinity for information mining and a belief that we are all making this diet thing too complicated.

In this third interview, I talked to Taubes in person at a middle-school library in Capitola, California. He was the keynote speaker at the Santa Cruz County Office of Education’s seventh annual Together for Kindergarten, an event that this year was focused on child nutrition—in particular, sugar. Attendees included preschool and kindergarten teachers, as well as K-12 administrators.

“This event is for those teaching young children with the intent to help inform their policies around the food they serve in their programs/classrooms,” wrote Carol Mulford, child development department manager for the Office of Education, in an invitation to community partners.



**Andréa Cecil: I was interested to hear how you got to become a journalist. Was that something you always wanted to do?**

Gary Taubes: I wanted to be an astronaut.

**Really?**

Yeah, so I studied physics in college. And then I came to graduate school at Stanford. And it didn’t seem like the world had any call for 220-pound astronauts in 1978. I was getting a master’s in aeronautical engineering and I wasn’t very good at it. And along the way I had read “All the President’s Men” by Woodward and Bernstein and decided it would be cool to be an investigative journalist. So I applied to Columbia Journalism School, and at the time the future looked like science writing so they bought all my physics and aeronautical engineering background.

I actually wanted to do investigative reporting, but the newspapers were a little more savvy about my background, so I couldn’t get any good jobs. And the only job I could get that would allow me to stay in New York City, where I lived, was science writing, so I became a science writer. And a few years in it turned out that there’s some pretty bad science out there and that somebody who thinks critically and skeptically and is industrious as a reporter could do some pretty interesting stories. So I just kind of fell into my version of investigative journalism.

(For my) my first book (“Nobel Dreams”) I lived at this physics laboratory, CERN, outside Geneva, and I thought I was going to be covering a great breakthrough in physics. It turned out that they had made a mistake and screwed up, and the head of the experiment was busy



trying to cover this up. This is an experiment with, like, 150 people on it—I mean huge, expensive experiment. Some of the physicists were trying to figure out how they screwed up and do good science. The kind of Machiavellian Nobel laureate who ran the experiment was trying to cover it up as long as he could so he didn’t have to be embarrassed, and a book that I thought was going to be about a great breakthrough turned out to be an exposé on the kind of politics and sociology of this particular experimental world.

And after that, I was kind of hooked. I’d interview scientists and they would say, “Boy, if you think this guy, this Nobel laureate you wrote about, was particularly Machiavellian, you should write about this guy. He’s really bad.” And every field had some very (influential), very ambitious, successful scientist who was kind of cutting fast and loose with the evidence, and the other scientists were more than happy to find a journalist who was interested in that stuff. So one thing led to another.

**You were a rarity at that time, I would imagine.**

Yes, very much so. Science journalists tend to be translators of science. They see themselves as taking these complex subjects and making it entertaining and palatable. I enjoy doing that, but this sort of digging to find where the truth was was a lot of fun.

**What was your first job?**

Discover magazine in 1981 when it was owned by Time Incorporated back before Time Inc. became Time Warner and then became Time Warner AOL. And then it was 1984—I went off to write my first book, and I never really went back to a job afterwards. I stayed freelancing and writing ever since.

**How do you like writing?**

I don’t. But I love reporting. <laughing> One of the reasons I prided myself on my reporting is because as long as you’re reporting you don’t have to write. So it’s a great procrastination tool to just keep asking questions and reading. One of the problems with the Internet right now is that there’s sort of an infinite amount of material you could read, if you want to. So you could procrastinate forever. And if you get to the point where you have a little bit of financial freedom—ya know, usually you start writing when the specter of going bankrupt forces you to. <laughing> And now it’s like, “OK, my books are doing well.” You have to find another reason to force yourself to actually do that hard work of writing.

**Right. There’s that ubiquitous quote about writing: “Writing is easy. You just have to sit down and open a vein.”**

Yeah. Sisyphus is always my metaphor. Wake up, push the rock up the hill.

**Exactly. So there’s also this stereotype about writers that I encounter frequently that we’re sort of introverted and reclusive. Do you think that’s true about you?**

It’s certainly become true. <quick laugh> I don’t know about introverted. I rarely leave my house anymore. It’s a little frightening. People on the block are beginning to think of me as the reclusive writer who they see, like, once a month at the market. But I hope that’s more of a function of my workload than my personality.

**And right now it’s mostly the sugar book that you’re finishing up?**

It’s finishing the sugar book and then the Nutrition Science Initiative work, which is always fascinating and challenging in a different way.

**What can you tell us about the sugar book at this point?**

It’s almost done. The title is gonna be “The Case Against Sugar”—very straightforward. The argument I make is if this was a criminal case, you’ve got tens of millions, hundreds of millions of people suffering from obesity and diabetes; you’ve got these unprecedented epidemics of obesity and diabetes, and sugar should be the prime suspect. And this book is sort of the prosecutor’s argument. Here’s why, even though I actually think the evidence is ambiguous. I mean if it was a criminal case, you would have enough to indict but not to convict because all the research has holes in it—short-term studies when you’re looking at long-term chronic problems. It’s very questionable epidemiology. But there’s just a hell of a lot of circumstantial evidence.

“There’s no point at which I will say, ‘I’ve had enough (sugar).’ You’ll stop eating it either when you feel guilty or you feel sick.”  
—Gary Taubes

Before the event, Mulford had retrieved from the trash empty packages that once held snacks teachers gave to students. What she unearthed included Gatorade, sugar-covered raisins and candy. She sorted the wrappers into gift bags; attendees picked through the items and noted added-sugar content as part of an activity that preceded Taubes’ talk.

During his hour, Taubes focused on sugar. He called it his “buzzkill lecture” in which he alluded to sugar as an addictive drug not unlike cigarettes. Taubes is a former smoker of 20 years.

He noted that eating sugar never makes him feel full.

“There’s no point at which I will say, ‘I’ve had enough,’” he explained. “You’ll stop eating it either when you feel guilty or you feel sick.”

\* \* \*





And it's a fascinating story about how the sugar industry and the research establishment sort of conspired. One because of self-interest, and the other because of dysfunction conspired to keep sugar from being perceived as a primary suspect for about 30 years past the point where we should've just said, "Hey, enough is enough. This stuff seems too dangerous to consume in any quantity."

**Now you have obviously been outspoken about these very topics in the past. Has your life ever been threatened over it?**

No. I always wondered what I did wrong. <wide smile> No, it's funny, Rob Lustig—I think it was Rob, and forgive me, Rob, if I'm wrong about this—found at one point a sort of "enemies list" of the sugar industry. It's how he described (it) or how I perceived the description. And I wasn't on it. And I thought, "What am I, chopped liver?"

**Were you disappointed?**

A little bit. But the sugar industry (is) quite brilliant at the public relations—or at least my perception of their public relations—which is they have a just tremendous product. People love it, children love it whether or not it's addictive. It'll pretty much sell itself as long as they stay out of the way. And they've been so successful for so long that the best way to deal with challenges to your product is you let somebody else, maybe you can find a third party to say, "This paper wasn't written well" or "This article had holes in it." But you pretty much stay quiet and just keep doing what you're doing 'cause it's worked until then. You start drawing attention to people arguing that your product's toxic by challenging them; you create more and more discussion about something you don't want people to talk about. Better to just let everything pass and we'll just keep having our Coca-Colas. That's my take

on the public relations.

**So even though you're not on the enemies list—**

Not yet.

**How effective do you think that you've been?**

Hard to judge. I mean, sugar consumption in this country is coming down and soda consumption's coming down, but that dates to about 1999/2000. So it's hard to tell whether I've had an effect or I've just been riding a wave. It's an association. My work associates in time with changes in the American diet, but that doesn't mean it's had a causal effect. I'd like to think I have but everyone would.

**You mentioned the idea of putting sugar on trial.**

Yes.

**What are your thoughts about an actual warning label on sugary beverages?**

I mean, I'm all for it. I think everything that draws attention to what I believe are the probable metabolic effects of this substance is a good thing. Matter of fact, I'm skeptical of the benefit of sugar taxes other than they continually remind people that this is something they should think of as unhealthy. Or probably unhealthy. Or sufficiently unhealthy that they should avoid it, if possible. I used to be a smoker and (it) certainly helped to quit to know—or at least to think—that cigarettes were gonna shorten my life.

**How long were you a smoker?**

About 20 years. And I still chew Nicorettes.

**Really?**

Fifteen years after I quit, yes. It's another very effective drug.

**Absolutely. So the question always comes up about how much is too much sugar. And it kind of aligns a little bit with the argument about how many cigarettes are too many cigarettes. What would be your response to that? How much sugar is too much sugar?**

Well, it's funny because the epilogue of my book, the title is "How Much Is Too Much," question mark. I compare it to cigarettes and I said, "The problem is we don't know." First of all, if it is addictive—we can talk about that in a second—then as long as you're eating it, you're gonna want more. As long as you're drinking it, you're gonna want more. So you keep your sweet tooth alive. Like, I could not have

quit smoking by trying to smoke in moderation. Matter of fact, I tried to smoke in moderation my whole life. It's a failure. As soon as life gets a little stressful, moderation goes out the door and you're back up to whatever you were before. If somebody had said, "Gary, you can smoke two cigarettes a day. It's not gonna increase your risk of cancer or heart disease. You won't even have bad breath in the morning when you wake up," I still wouldn't have been able to stay at two cigarettes a day. And I would have thought about cigarettes all the time. At least anecdotally there's a similar phenomenon with sugar.

Like when I first gave up carbohydrates as an experiment, the hardest thing to give up was orange juice in the morning. I thought it was God's way of getting the taste of the night out of your mouth, but in retrospect it was so difficult to give up that I suspect it was all about the sugar content. I can't imagine having a glass of orange juice anymore, weirdly. And the same phenomenon happens with, like I said, cigarettes. That issue makes it virtually impossible to talk about how much is too much.

The other story I was gonna tell: In (the) 1730s, this British doctor named (Frederick) Slare writes an article defending sugar against the charges of another doctor who came 60 years before him. This one doctor (Thomas) Willis condemned sugar in, like, the 1670s. Slare comes along in 1730, writes an article called "Vindication of Sugars Against the Charges of Dr. Willis, Dedicated to the Ladies." And it's completely dedicated to vindicating sugar. "There's nothing wrong with this. It's a completely healthful substance, it's terrific, but," he says, "women who are predisposed to get fat shouldn't drink it, eat it 'cause it'll make 'em fat." This doctor who wanted to convince everyone that sugar was harmless was still willing to warn women away from consuming.

And then 140 years later—1868 or so—a Harvard student writes a thesis on diabetes in which he discusses the possible role of sugar in diabetes, and he discusses the work of this Portuguese physician named (Abel) Jordao who thinks that sugar might actually make people fat. And the Harvard student and this award-winning thesis (say), "This would explain why the women who tend to be too thin now drink sugar water in order to put excess flesh on their arms." Scientifically those are meaningless observations.

But there might be some truth to them. And you wonder how we've changed even as a race over the past 200 years as we've consumed sugar. Basically (in) 300 years we've become this sugar-eating species.

**People talk about sugar and say, "Well, it just really boils down to calories in and calories out."**

Right. <smiling>

**“They come up with this idea that foods that make you fat are foods that have too much energy. You’re consuming more than you’re expending ... . The problem is science evolves.” —Gary Taubes**

**Can you address that?**

The modern history of nutrition starts in the late 1860s with the creation of room-sized calorimeters in Germany. And these are room-sized boxes that allow the researcher to measure the energy expended by dogs or humans under different conditions.

So from the 1860s to the 1930s nutrition science is calorimetry—the science of energy in and energy out, and its vitamins and mineral deficiencies. These are the tools they had and these are the things they can study. So they come up with this idea that foods that make you fat are foods that have too much energy. You're consuming more than you're expending—that's how you get fat because that's the science of the day.

The problem is science evolves. Like the whole field of endocrinology, of hormones and hormone-related diseases, (was) basically born in the 1920s and exploded in the 1960s with the invention of another technique that allows you to measure hormones in the bloodstream. The obesity researchers and the nutritionists are just locked into this 100-year-old science. They perceive any discussion of obesity as a hormonal disorder as an excuse for a fat person to eat as much as they want and to be lazy.

And, of course, the researchers tend to be thin. The ones who are dominating the discussion were exceedingly thin, so it's very easy for them to think that it's a behavioral defect. And when the endocrinology explodes in the 1960s and researchers basically learn that the hormone insulin is primarily involved with regulating fat, now that implicates carbohydrates in fat accumulation, and we're busy blaming the fat in our diets, saturated fat for heart disease and telling people to eat more carbohydrate. So it's very inconvenient to have a field of science that implicates carbohydrates.



Between the late '60s and 1980 or so, this whole idea that endocrinology and hormones are involved is kind of removed from the discussion. This is what I documented in “Good Calories, Bad Calories.” It’s a little bit crazy. You’re dealing with diseases.

I mean it’s funny—the research community, they’re willing to assume that 100 calories of fat (has an) entirely different effect than 100 calories of protein and carbohydrates. All metabolize different and in different organs, and they’re partitioned differently. One hundred calories of saturated fat has a different effect, as far as they’re concerned, on the accumulation of atherosclerotic plaques on our artery walls than 100 calories of unsaturated fat. But if you tell them that 100 calories of sugar has a different effect on the human body than 100 calories of starch or 100 calories of fat, they treat you like you’re a quack.

**Tell us about NuSI. What is its mission? What does the acronym stand for?**

NuSI stands for the Nutrition Science Initiative. I co-founded it with a physician named Peter Attia four years ago. Our belief when we started it is that there was one study we really thought could be done that could dislodge the research community from this energy-balance perspective, show them that basically you could reduce fat accumulation in the human body without changing the caloric intake of a human. You can do it in rats effortlessly, but they don’t pay attention to the rat studies.

Our mission is to reduce the burden of obesity and diabetes. This isn’t an academic exercise. We want to have an effect, and we believe we can have an effect by fixing the science. Our motivation was more like a Manhattan Project where we have an obesity and diabetes epidemic, we have conventional thinking that it’s caused by eating too much and not enough exercise, maybe the dietary fat content of the diet. (The) alternative hypothesis that we find compelling (is) that it’s the carbohydrates, the sugar and the grains, so let’s raise the money to do major studies that have the ability to resolve these controversies that we’ve been discussing, including the role of sugar in the diet.

We’ve got four studies up and running. One of ’em, a pilot study, has been completed, and a paper has been submitted for publication. The results are interesting but they’re very hard to interpret. We’re working with this group of investigators, very influential investigators; our goal was to get the research community themselves to do the studies necessary.

See, you can find people who believe what we believe, and if you fund them and they do the studies, nobody else pays attention to them. So the idea was let’s find influential researchers. It’s a challenge to get the right studies done. It’s challenging to work with researchers who have a sort of a fundamentally different world view on the cause of these disorders, so we’re constantly clashing because we have a tendency to talk by each other. We’ll see what happens.

**The goal sounds very grand. Do you think that you can accomplish what you set out to accomplish?**

<sighing, smiles> Um, yeah. My colleague, Peter, who has since actually left NuSI a couple of months ago, there was a period once where he was a bit discouraged and he needed a pep talk, and my pep talk was, “What we’re trying to do is hopeless, you realize this. No one’s ever done this before. Ya know, there’s a saying in science that ‘science progresses funeral by funeral’—you wait for the older generation to die off and the new, younger generation grows up with a new paradigm.

“(What) we’re trying to do is to get the older generation to do the research to convince themselves that their paradigm—their world view that it’s all about calories—is incorrect and they should be thinking about the hormonal metabolic effects of these foods, and we get them to do the experiments. Nobody’s ever done this before. Even if we get the study done and it gets the results we expect, which is a big ‘if,’ then it’s gotta be taken seriously. The researchers have to understand the (importance) at (stake). The press has to understand how important it is, the government does. It’s gotta be communicated correctly. It’s hopeless. How are you gonna let a little blip like this depress you considering then the long run—we can’t win.” And Peter went, “Yeah, it’s a good point. I never looked at it like that.”

**But he still left. Why did he leave, and what’s the plan going forward?**

Oh, he had other very exciting things he wanted to do. It’s a hard slog.

We say it’s very important that we understand what’s causing the obesity and diabetes epidemics. Why are people getting fatter? Which leads into the question of “What’s a healthy diet?” And the nutritional community will say, “We know what a healthy diet is. It’s whole grains and fruits and vegetables and lean proteins. We all agree that people shouldn’t be drinking sugary beverages, and we all agree that white bread is bad. So what’s the issue? Why spend money doing more research? Why not band together and communicate that this is a healthy diet?” And then we’ll say, “Well, it probably is a healthy diet, if you’re healthy. But a third of the country’s obese, 30 million Americans supposedly have diabetes, two-thirds are overweight. Are they going to be able to become metabolically healthy just eating this generic healthy diet? Maybe they need a lot more fat in their diet. We think they do. Maybe they need a stronger dietary intervention to become healthy again.” But now you start having a trickier argument to make. So it’s hard. And there’s a lot of different ways to attack it and approach it.

The funny thing is I’m optimistic. We are making progress already. We’ve been discussing this huge study with these obesity investigators. We keep saying, “The point of this study is we want to test this hypothesis that a calorie is a calorie. So we’re gonna fix calories and we’re gonna change the macronutrient content and see what happens.” And the researchers we’re working with are now saying, “Well, you can’t

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“If you tell them that 100 calories of sugar has a different effect on the human body than 100 calories of starch or 100 calories of fat, they treat you like you’re a quack.”

—Gary Taubes

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100

have too much sugar in the test diet because that’ll confound things ’cause of the metabolic and hormonal effects of the sugar.” And so we say, “So what you’re saying is we’re right. You now agree that a calorie isn’t a calorie <laughing> and therefore we can’t test this hypothesis, so we can save 20 million dollars because you’re now agreeing with something you wouldn’t have agreed with four years ago.”

And it seems facetious, but in four years they’ve come closer to agreeing with us because (in) engaging with us they’re thinking about it. And the country (is) the same. There’s a huge low-carb, Paleo movement out there now. It competes with the vegetarian and the vegan movement. They have different belief systems, but both of ’em get rid of sugar and white bread for the most part.

There’s a lot of physicians out there—maybe many hundreds to a few thousand—who are now kind of committed to this dietary intervention. It’s not enough. I mean if we’re wrong, it’s too much—that’s a given. What convinces these physicians, what makes this movement happen is that people become healthy eating this way. The physicians, if they can get their patients to eat this way, their patients who were obese become less obese or lean, the ones who were diabetic become less diabetic or healthy. It seems to be a very powerful phenomenon to these physicians and to the patients. So that’s compelling.

It’s like you’re playing a poker game with this huge establishment and there are a thousand people at the table and they all cheat—they talk to each other, they communicate, they tell ’em what they have in their hand—but we still have the best hand. That’s how it feels. That’s why I’m optimistic. That’s why I think eventually we’ll win.

We may not get as far as we would like, but there’s something powerful that happens. People become healthy in a way when they stop eating sugar and grains, and maybe starches and fruit—that is pretty compelling, both to physicians and to their patients and the rest of us.

**Do you still eat a piece of pumpernickel bread every morning?**

<smiling widely> Yeah, pretty much. Yeah, my wife complains: “You eat this way, there’s no crunch in the diet anymore.” So you toast the bread.

*Editor’s note: Questions and answers edited for space and clarity. ■*

**About the Author** Andréa Maria Cecil is assistant managing editor and head writer of the CrossFit Journal.



THE  
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# VIRTUOSITY IN PHOTOS: YOUTH MOVEMENT

Colleen Baz presents CrossFit's DeCO's program for the Girls Athletic Leadership School.



ALL PHOTOS: COLLEEN BAZ





In 2014, CrossFit DeCO began its relationship with the Girls Athletic Leadership School. GALS is a unique school with its curriculum rooted in the importance of movement and the mind-body connection. Four days a week we are teaching this group of teenage girls how to move well and how to feel confident. What we couldn't have imagined was how CrossFit would impact them in self-awareness, energy level, community and pride. We have created a safe space for a group going through a notoriously awkward phase in life and helped them understand they are capable and in control of their individual CrossFit journey.

—Leslie Friedman, owner of [CrossFit DeCO](#)













THE  
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# WEIGHT A SECOND: FINISH!

Mike Burgener offers quick tips to correct errors in the snatch and clean and jerk.

BY MIKE WARKENTIN





Thomas Campitelli/CrossFit Journal

A good finish is the product of great balance and pulling mechanics. It puts the lifter in prime position to pull himself or herself under the bar with speed.

Just as it's possible to correct weightlifting errors, it's possible to cause errors when cues go awry.

Take, for example, the oft-used cue “finish!” What the coach is looking for is a natural position created by perfect balance and unbridled aggression. In a snatch or clean, a profile shot of the finish will show a lifter at full extension—ankles, knees and hips—with the body completely rigid.

Once the finish position is hit for just a fraction of a second, the lifter must move around the bar to the receiving position. “Around” is the key word.

“If he goes straight down, he’s going to hit himself in the face or he’s going to intuitively swing that bar around his face,” said Mike Burgener of CrossFit Weightlifting.

A rigid finish position with balance between bar and athlete will allow the lifter to efficiently and quickly move around and under the bar. In that finish position, a straight line can be drawn from the foot through the hips and torso to the head. This line is not vertical but leans backward slightly.

The position is sometimes called “layback,” but Burgener doesn’t use that term.

“‘Layback’ is a misconception,” he said. “You’ve got to understand that that position is nothing more than the body being rigid. You’re up on your toes really because you’ve driven so hard with your legs. That body now comes down and around the bar.”

The proper finish is naturally created by precise balance in the first and second pulls and an aggressive leg drive through the full foot to create extension of the ankles, knees and hips. Some coaches will improperly attempt to demonstrate this position with PVC or light barbells, thrusting the hips forward and pulling the shoulders back while balancing on their toes in a bowed position. It’s very common for athletes to “practice finishing” by using this position, which is not seen in a good lift.

In this inefficient system, the body is not rigid because the hips have been thrust forward to help the coach or athlete maintain balance in a contrived position. The error becomes more pronounced if athletes are aggressive: The more the shoulders go back, the more the hips must go forward. If an athlete recreates this bowed position during a lift, it’s likely the hips have moved horizontally during the scoop and caused the bar to be flung away from the athlete when the hips extended at the end of the second pull.



While this position is aggressive, the hips are forward and the shoulders are back, putting the bar past the toes. This can create an inefficient, loopy bar path.



Thomas Campitelli/CrossFit Journal

Burgener has a better way to demonstrate the proper finish position, and it involves standing with your back to a wall: “You make your body rigid—you stand at attention—and then you ... step an inch, maybe an inch and a half away from the wall and fall into the wall.”

To help athletes find the position without a wall, Burgener has stood behind lifters with his hands about one inch away from their shoulders. He’ll instruct them to stiffen the body and then lean back into his hands—they have to trust him, of course. From there, he adds a barbell.

“I want you to put it at the high hang, and I want you to do a jump 1 millimeter off the ground, and I want your shoulders to finish into my hands.’ So now when they jump, their hips go down and up and their shoulders have to hit my hands. I’m in the same position so they get that feel of what that position feels like under load,” he explained.

Keep in mind that the finish position looks slightly different as loads increase. Lighter loads will produce a finish position closer to vertical, while very heavy loads will produce a finish farther back from vertical. It’s all about maintaining balance in the feet: Correct balance will naturally create the correct finish. That balance is first found in the setup. If the bar-athlete system is not balanced throughout the first and second pulls, a proper finish is all but impossible due to improper weight distribution or poor bar path.

If the lifter stays precisely balanced as the bar moves from the floor, past the knees and to the mid-thigh, the athlete will naturally bring the hips to the bar in the scoop and then hit the correct finish position unconsciously. That, in turn, allows the lifter to efficiently punch under the bar at the right moment.

“You have to know what finish is. That’s another position,” Burgener said. “Stance and grip are easy, but there’s a million positions that you have to hit in the snatch. And you know what positions are affected by? The feet.” ■

**About the Author:** Mike Warkentin is managing editor of the CrossFit Journal and founder of [CrossFit 204](#).





Tai Randall/CrossFit Journal

# THE CrossFit JOURNAL EYE FOR AN AYE

BY ANDRÉA MARIA CECIL

Zach Forrest, others share strategies for identifying suboptimal movement and helping athletes make positive changes.





It's all about delivery. Consider the effect of the "negative" cue "don't round your back" versus the positive phrasing of "pull your chest up."

When seeing and correcting athletes' movements, the most important thing to remember is to encourage, coaches said.

"We want to give them something to work towards—not something that they're doing wrong. That helps us keep it positive. Because correcting by its very nature is critical. You're telling someone they're not as good as they could be," explained Zach Forrest, owner of CrossFit Max Effort in Las Vegas, Nevada, and a member of CrossFit Inc.'s Seminar Staff.

"Some people respond well to being criticized and taking harsh corrections, but the majority of people do not."

At CrossFit Ireland in Dublin, owner Colm O'Reilly takes the same approach.

"I want to give them way more encouragement than correction."

Rather than pointing out errors, O'Reilly said he'll note what the athlete did correctly and then ask for more.

When teaching an air squat, for example, he might go with something like, "OK, good. Now let's get your knees over your toes."

And he understands there is a time and a place for all of his observations.

"I'll try to praise as publicly as possible," O'Reilly said. "And the criticism is as private as possible."

When it comes to doing the same thing during the throes of a workout, not much changes, coaches said. Still, trainers will on occasion stop an athlete while the clock is running.

"I'm not doing it to be a jerk ... I'm doing it to help their workout," said Carl Sandridge, owner of C Town CrossFit in Cleveland, Ohio.

He continued: "I'm going to do my very best to hammer home what you need to know so you can move safely first. ... As you move better, you can move with more intensity."

"I find that if you give people  
a reason why you're doing  
it, they won't freak out."  
—Colm O'Reilly



Joe Shea, owner of CrossFit 1727 in Shrewsbury, Massachusetts, said he likes to fix major faults and then focus on other mistakes later.

“So we don’t confuse them,” he offered.

And so athletes don’t lose a lot of time.

“Don’t stop them for a lecture,” O’Reilly emphasized.

But before any of that can happen, coaches must first establish a relationship with their athletes.

“I find that if you give people a reason why you’re doing it, they won’t freak out,” O’Reilly said of stopping athletes during a workout. “We’ve built up that trust where they know we’ve only their best interest at heart.”

For Forrest, instances of stopping an athlete during a workout are few and far between.

“The only time that I stop an athlete is when I think they’re blatantly ignoring me or being unsafe.”

Both he and Sandridge said warm-ups at their affiliates focus on one specific point of performance at a time when reviewing a movement.

Not only does it help the coach—especially a less experienced one—to avoid correcting numerous faults simultaneously, but it also allows the athlete to focus on one aspect instead of multiple, Forrest explained. And it provides data the coach can use right then or later.

“There’s never a time where you’re not analyzing movement and developing a game plan for that athlete,” he said. “You’re gathering information you can use later on in the class for correction.”

Seeing and correcting, Forrest added, are the two most important skills for a coach to develop.

“You’re only as effective as a coach as you can see and correct. The more that a beginner coach focuses on those specific two things, the broader of a foundation they have to grow from.” ■

**About the Author:** Andréa Maria Cecil is assistant managing editor and head writer of the CrossFit Journal.



Warm-ups aren’t just for raising heart rates. Coaches say it’s a prime time to instruct, note errors and make corrections athletes can use later in the workout.





THE  
**CrossFit** JOURNAL

# PREDIABETES: YOUR FINAL WARNING

Physicians explain what “prediabetes” is and what the diagnosis means for your health.

BY ANDRÉA MARIA CECIL





Courtesy of Dr. David Cavan

Dr. David Cavan

The word “prediabetes” makes Dr. Donna Polk’s patients pay attention.

She can tell them about their risk of a heart attack, a stroke—“they don’t care,” she said.

“But when I say ‘prediabetic,’ they say, ‘What? I don’t want to be diabetic,’” explained Polk, medical director for cardiac rehab at Brigham and Women’s Hospital, a nonprofit teaching affiliate of Harvard Medical School.

The word, she explained, indicates where on the spectrum a person’s health lies.

“It’s a continuum,” said Polk, also director of the hospital’s cardiovascular fellowship training program. “It’s not like one day someone wakes up and they’re diabetic.”

“It’s not like one day someone wakes up and they’re diabetic.”  
—Dr. Donna Polk

Specifically, a person is considered prediabetic in the United States when his or her fasting blood glucose falls between 100 and 125 milligrams per deciliter of blood, Polk said.

Half of U.S. adults had **diabetes or prediabetes** in 2012, according to The Journal of the American Medical Association. The American Diabetes Association puts the number of Americans 20 and older with prediabetes at **86 million**—nearly a 9 percent increase from two years earlier.

“It’s huge. It’s ever growing,” Polk said. “People will call it an epidemic.”

The Mayo Clinic—said to be the first and largest integrated nonprofit medical group practice in the world—lists “prediabetes” **on its website’s Diseases and Conditions page**, saying it constitutes a blood sugar higher than normal but not yet high enough to be classified as Type 2 diabetes.

“Without intervention, prediabetes is likely to become type 2 diabetes in 10 years or less. If you have prediabetes, the long-term damage of diabetes—especially to your heart and circulatory system—may already be starting,” according to the Mayo Clinic, whose yearly research budget exceeds US\$500 million.

Untreated, many cases of prediabetes progress to Type 2 diabetes, which can lead to high blood pressure, high cholesterol, heart disease, stroke, kidney disease, even blindness and limb amputation.

“It’s a valid concept because it means that you have moved further up the curve to having diabetes,” noted Dr. David Cavan, director of policy and programs at the International Diabetes Federation in Belgium. Before holding his current position, Cavan was a

diabetes physician in the U.K. for more than two decades.

But, Polk and Cavan said, lifestyle changes—specifically diet and exercise—are the most effective at lowering blood sugar to a healthy level.

“Whether you go up or down that curve is very closely related to lifestyle,” Cavan said.

While medication can mitigate some of the effects, a diet high in sugar or carbohydrates will “outwork” the benefit, he continued.

“It is actually a very helpful thing ... to be able to identify someone as being at risk of developing diabetes and therefore be able to motivate them to make lifestyle changes ... that, at best, reverse them back down to normal metabolism,” Cavan said.

Even a modest lifestyle change can make a significant difference, Polk noted. A mere 7 percent weight loss and only 150 minutes of exercise per week, for example, is all it takes to make a significant change, she said.

“It doesn’t take much, and that’s what I often tell my patients. Even 10 or 15 pounds can make a huge difference, can normalize a lot of those numbers.”

Polk added: “It’s really about little changes. Little changes that will make a huge difference that will prevent diabetes and its subsequent complications.” ■

**About the Author:** Andréa Maria Cecil is assistant managing editor and head writer of the CrossFit Journal.



THE

CrossFit

KITCHEN



### MEXICAN MEATBALLS WITH CALABACITAS

By Nick Massie

#### Overview

This recipe from Nick Massie of [PaleoNick.com](http://paleonick.com) unites spiced meatballs made of grass-fed beef with a squash-based side dish for a delicious Mexican-style meal. Massie is the instructor for the newest CrossFit Specialty Course: [Culinary Ninja](#).

#### Ingredients for Meatballs

- 2 lb. grass-fed ground beef
- 2 c. onions, diced
- 1½ c. celery, diced
- ¾ c. green bell pepper, diced
- 2 eggs
- ½ c. cilantro, chopped
- ½ tsp. chipotle powder
- ½ tsp. cinnamon
- 4 tbsp. Super Radical Rib Rub

#### Ingredients for Calabacitas

- 6 c. zucchini, large dice
- 1 tbsp. olive oil
- 2 c. onions, large dice
- 2 tbsp. garlic, chopped
- 1½ c. poblano pepper, diced
- 1½ c. red bell pepper, diced
- ¾ c. green bell peppers, diced
- 4 c. tomato puree
- Kosher salt, to taste





### Directions for Meatballs

1. In a large mixing bowl, combine 2 lb. ground beef, 1½ c. celery, 2 c. onions, ½ tsp. chipotle powder, ½ tsp. cinnamon, 2 eggs and 4 tbsp. Super Radical Rib Rub. Mix well until uniform.
2. Heat a cast-iron skillet over medium-high heat and add 1 tbsp. of olive oil. Using a 1-oz. portion-control scoop, scoop meatball mixture into the pan. Repeat the process until the mixture is gone and you've got a pan full of meatballs.
3. During cooking, turn the meatballs 3-4 times, with the goal of achieving nice caramelization on all sides and an internal temperature of 165 F.
4. When meatballs are done, pair with calabacitas for a killer meal.

### Directions for Calabacitas

1. Heat a sauté pan over medium-high heat. Add olive oil and garlic and sauté until garlic is toasted.
2. Add onion and ½ tsp. chipotle powder. Stir.
3. Add 1½ c. red bell pepper, 1½ c. poblano pepper, ¾ c. green bell pepper and a pinch of kosher salt. Place a lid on the pot and cook for 3 minutes.
4. Add zucchini and another pinch of kosher salt. Replace the lid on the pot and cook 3 minutes longer.
5. Add mushrooms, stir to incorporate and cook for 3 additional minutes.
6. Fold in 4 c. tomato puree, bring to a simmer and the calabacitas are ready. Share with your friends and enjoy!



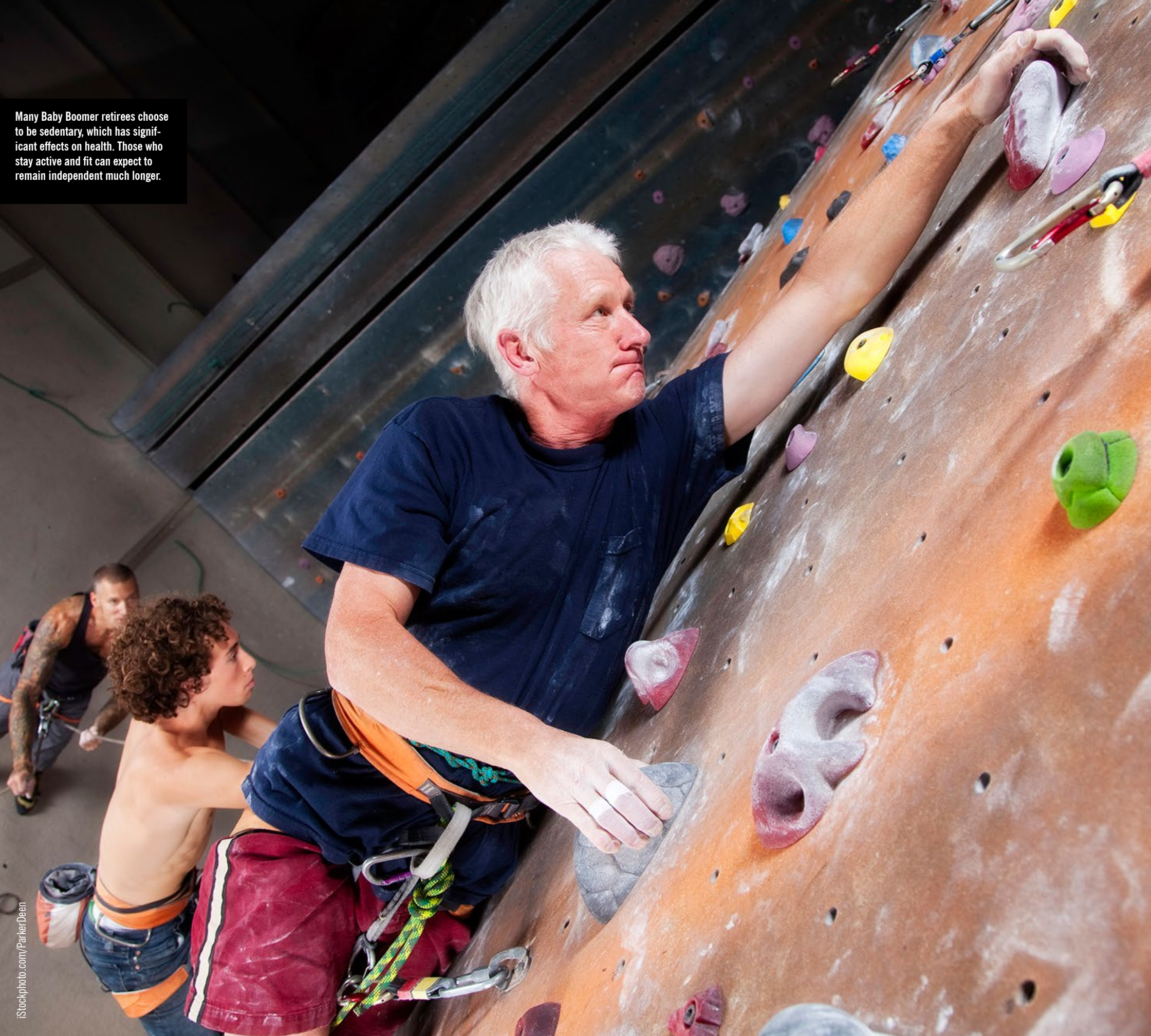
# FITNESS: A CHOICE FOR THE AGES

Far too many retirees avoid exercise and doom themselves to decrepitude and loss of independence during the Golden Years.

BY LON KILGORE







Many Baby Boomer retirees choose to be sedentary, which has significant effects on health. Those who stay active and fit can expect to remain independent much longer.

For most of us who were born before NASA, color TV, McDonald's, Walmart, Disneyland, Bannister's four-minute mile and the polio vaccine, we have an emerging problem: We decide not to go to the gym.

We are making this choice far too often, and it has a direct effect on how functional we are in our later years and how many of those years we have.

## Generational Malaise?

The most senior of us belong to the Good Warriors, a disciplined, self-sacrificing generation comprising those born between 1909 and 1928, while those slightly younger are members of the Lucky Few, a smaller group born 1929-45 and characterized by a higher rate of white-collar employment. These groups are often considered a single generation—the Greatest Generation—that endured hardships including World War I, the Great Depression, World War II, the Korean War and the Vietnam War.

Regardless of the name, the last of this generation reached retirement age (65) in 2010, and most have long transitioned to their version of retirement, living out the remainder of their lives in peace and comfort—the rocking-chair retirement.

The subsequent generation—and once the most plentiful generation at 77-78 million strong—is the Baby Boomers. Born between 1946 and 1964, members of this post-World War II generation are often divided into two sub-generations: the Hippies and the Yuppies. Hippies were born earlier and wanted to change or save the world; the Yuppies were born later and have been described as party-hardy career climbers.

Mobility problems with aging are not an effect of disease or inevitable decrepitude. I contend that they are outcomes resulting from the choice to be sedentary.

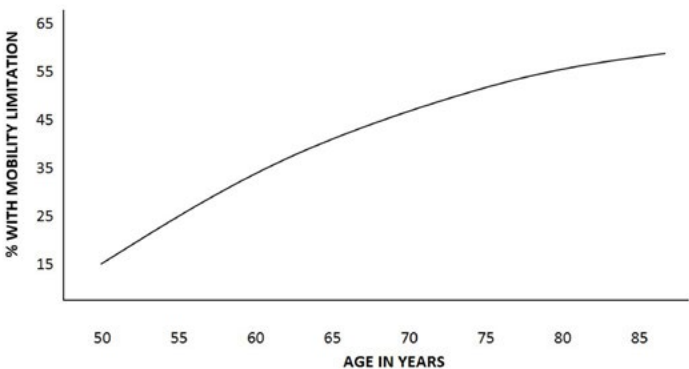
The Baby Boomers are in the process of exiting the work force, with the oldest of the generation having reached retirement age in 2011. (The legal retirement age after 2000 is 67, which may have delayed Boomer retirement until 2013; it is also estimated that at least 33 percent of Baby Boomers delay retirement



beyond statutory dates for financial reasons.) Retirement for this group generally does not include the rocking-chair approach of the previous generation. Rather, there tends to be a desire to do things that were prohibited in early life due to familial obligations and work responsibilities.

It is here that we see a divergence of intent and reality. Activity levels drop significantly after retirement: Many Baby Boomer retirees choose to be sedentary. Up to 48 percent of Baby Boomers are sedentary, up to 92 percent have dietary shortcomings, and, unfortunately, over 70 percent of Baby Boomers are currently not planning to make changes in their lifestyle habits (4). The choice to be sedentary is problematic. It may not be an in-your-face problem—at least for now—but it is a problem nonetheless.

Did you know that 2001 data demonstrated that 15.4 percent of those over 50 and 36.2 percent of those over 70 have some degree of mobility problem (5)? Did you know that by 2009 17.3



**Loss of mobility with advancing age is largely avoidable. At 50, a little over 15 percent of the population has a limitation, but by 85 over 55 percent are limited (graph derived from 5,6,7).**

percent of adults aged 55-64 had difficulty walking one quarter mile, and this limitation in function affected 56.1 percent of the population by the time they were 85 (7)? Did you know that half of the over-65 population now has difficulty stooping, bending or kneeling (6)?

These documented and progressively worsening examples of mobility problems with aging are not an effect of disease or inevitable decrepitude. I contend that they are outcomes resulting from the choice to be sedentary, from the belief that 30 minutes of low-level activity on most days will magically deliver fitness, and from the use of every easy-out approach and product promising to deliver fitness.

Simply, these problems come from a lack of physical fitness.

## A Choice of Dependency

For the Baby Boomer generation, a looming and sobering problem exists: In 1945 there were 12 older adults per 100 working-age adults in the U.S.—a 12 percent dependency rate. In 2010, that rate had grown to 21 percent, and in 14 years (2030) it is expected to be 35 percent.

It is often discussed that this increased growth in dependency will strain the economy of medical care with respect to disease management. What is not often considered is that if 35 percent of the population chooses to be sedentary and allows mobility to decay to the point of nonexistence, no one will be available to regularly assist with functions related to independence. Functional impairments or dependency could be absorbed by family and care facilities in preceding generations with lower dependency ratios, but not now, and not in the future.

We know that exercise training in older populations can enhance physical fitness and support functional levels similar to those of younger, physically active populations, so it is imperative for older adults to train to improve fitness—strength, endurance and mobility. Being physically active might help retirees avoid disease, but fitness is imperative for quality of life in later years.

Without a patent safety net of family and care facilities, those of us on the tail ends of our working years need to consider that choosing to be slothful now will—not possibly, will—diminish the quality of every year that remains. Choosing the easy chair rather than the gym now likely means we will be permanently confined to a chair or bed long before we would like.

## Investment Choices for Retirement

Getting ready for retirement starts weighing on your mind pretty heavily after the half-century mark. Financial readiness is the subject of thousands of articles. How much money do you need to retire? Where are the best places to retire? When can you afford to retire?

While fiscal preparation is critical, so is physical preparation. Although little guidance currently exists, it would be useful to know the investment required to create a level of physical fitness and resulting functional capacity that will support a quality lifestyle and independence long after retirement.

The level of investment certainly isn't zero—a sedentary life leading up to and during retirement. It also can't be a minimal investment of haphazardly accumulated minutes of physical activity. Physical activity might assist in staving off some diseases, and it's certainly better than nothing, but it does little to maintain and improve physical function in later life. That narrows our choice: The level



**The choice to avoid exercise and let fitness decay will have dastardly results that limit function, mobility and quality of life.**



of investment involves actually doing physical exercise—regular and progressive exercise—if we want to get the most out of our later years.

Exercise carries with it the intent to improve physical fitness, and physical fitness is the currency of increased quality of life—a currency that becomes more valuable with every passing year.

## Acquiring Physical Wealth

There is no easy way to acquire higher levels of physical fitness. Doing so requires true effort and dedication, two things modern social structures rarely ingrain in children, youths, adults or older adults.

We often believe readiness for a long and active life begins with physical education in school, but the reality is quite the opposite: As little as 3.8 percent of all U.S. elementary schools, 7.9 percent of middle schools and 2.1 percent of high schools deliver daily physical education to students for complete academic years (1). In fact, 2008 data indicated that up to 22 percent of U.S. school systems do not require students to take physical education at all (8).

Physical education and the development of fitness have taken a back seat to other disciplines for more than a half-century, and funding physical education has been a low priority in virtually all school systems. If physical education has been first on the chopping block in every academic budgetary crunch, and if it's not required in schools, what does that tell students—and even adults—about the value academia and government place on childhood fitness? Baby Boomers grew up in this environment: They were told fitness has value, but the actions of school systems and governments made it very easy for the public to dismiss fitness as a crucial element of life.

Physical education for boys in the '50s and '60s was quite robust, but this changed as the Boomers matured and passed through school systems. Boomers saw physical education reduced in value or omitted from requirement by “budgetary” constraint or a host of other reasons. Even those who did take physical education in school generally spent more time learning the rules of sports than acquiring knowledge about how to increase health and fitness for the rest of their lives. (Read more about physical education's fail-ures [here](#)).

Baby Boomers matured into adulthood during the era of commercial fitness in which the major emphasis in research and exercise prescription was identifying the minimum amount of exercise needed to deliver a health benefit (absence of disease), not fitness.



**Fitness is an investment: Time spent training to be fitter will likely result in greater vitality and more independence later in life.**



About 30 minutes of gardening three or four times a week seems like a rather pathetic attempt to preserve any aspect of quality of life.

The situation decayed further as research sought to determine the minimum amount of physical activity, not formal exercise, to stave off select diseases. About 30 minutes of gardening three or four times a week seems like a rather pathetic attempt to preserve any aspect of quality of life.

The commercial fitness industry tried valiantly and in many ways succeeded in attracting Baby Boomers to the gym to exercise, but it failed to do much with the majority of those who stepped into the gym. Shiny machines and submaximal-effort target-heart-rate treadmills were convenient and easy, leading to another mixed message and another Baby Boomer accepted belief: You can train easy and in the same way over and over and become fit. We know this isn't true; basic biology argues against it. But everyone wants to believe the easy way works, and we tend to avoid the hard path to anything.

Baby Boomers have seen more scientific and technological change over the course of their lives than any other generation. They are receptive to and voracious consumers of science and technology advances. Equipment that appears high tech or science based, even when it isn't, feeds into their penchant for convenience and ease. Old-school exercise, however, cannot be replaced by any new technology. Shortcuts simply don't exist, but that doesn't stop people from trying to convince themselves and others that there is an easy way to fitness.

One **recent headline** touted having a glass of wine each day to be equivalent to an hour at the gym. However, if it sounds too good to be true, it probably is, and this was definitely true of the glass-of-wine article, which misrepresented scientific findings. It's been about 30 years since the first “exercise pill” was postulated, and to date no pill, drink or device has proved to be shortcut to fitness and the other benefits of exercise.

The bottom line is that we need to skip all the silliness, glitz and gimmicks and just exercise to develop the physical capital needed for higher later-in-life physical function, higher quality of life post-retirement and more post-retirement years.



In CrossFit gyms, many athletes over 50 are fitter than inactive people who are decades younger.

## Just Get to the Gym

We would like to say it would be best for every Baby Boomer and member of older generations to simply find a local CrossFit box and start working with credentialed trainers who provide broad-based functional fitness training **scaled to individual need**. Although this might arguably be the fastest way to develop fitness, two operant issues prevent such a blanket recommendation.

First, over two-thirds of the over-65 population have at least one chronic disease (2). These people are not apparently healthy, and trainers, by virtue of their scope of practice, work with disease-free, apparently healthy populations. Those Baby Boomers with diseases need to rid themselves of the condition or be medically declared capable of unrestricted exercise before a trainer can work with them.

The other issue is that not everyone wants to do CrossFit, although most potential older clients would be hard pressed to describe the kind of exercise they need to do in order to develop fitness. This is a difficult issue to sort out. Those who are healthy would do well

to become active—the sooner the better. Those who are unhealthy would do well to consult a physician or trained professional who can advise them on appropriate physical activity.

As for exercise choice, fitness personality Covert Bailey stated at his seminars that the best exercise and exercise system for any individual is the one he or she will actually do.

Some people like to run. Some like to bike. Some like to lift. Some like to swim. You cannot make people voluntarily do what they don't like for any significant amount of time: Individual desire must be part of fitness development for anyone, not just those of us at or nearing retirement age.

The good thing about CrossFit is that any exercise can be included—it's a system that encourages variety and regular playing of different sports.

CrossFit trainers can teach and support CrossFit training proper along with more specialized training in running, weightlifting, powerlifting, strongman, gymnastics, kettlebells, rowing and more. In fact, of the exercise types listed in the 2015 American

College of Sports Medicine **top trends in fitness**, CrossFit gyms can, in general, deliver them all: body-weight training, high-intensity interval training, strength training, yoga, and functional-fitness training.

## Choices

Anyone nearing retirement age needs to understand that inactivity will have a dramatic negative effect on quality of life. We live in a world where medicine provides lifespans that challenge biology and bring the consequence of “frailty” to the forefront in social consideration of aging (3).

Our decisions to do nothing now create the consequences of frailty, decrepitude, loss of health and—very importantly—loss of independence in later life. Choosing to be physically active, but not fit, extends our lives without carrying forward our ability to thrive in the face of the world's constant challenge.

For those of us who make the choice to be physically active in later life, it is a very good thing. A choice to try to be disease-free as long as possible is brilliant. But we can do better.

Dylan Thomas wrote:

Do not go gently into that good night,  
Old age should burn and rave at the close of day;  
Rage, rage against the dying of the light.

To rage against aging is to choose to actively seek fitness, to logically

There simply is no substitute for sweat equity earned with time in the gym—time spent training hard to progressively improve fitness and quality of life to last a lifetime.



and progressively train to reap the promise of a spectacular return on your physical investment—health, independence, vitality, and longevity. There simply is no substitute for sweat equity earned with time in the gym—time spent training hard to progressively improve fitness and quality of life to last a lifetime.

The other choice is to sit back and wait for time to rob you of your quality of life and longevity.

The couch may be comfy, but you need to choose wisely for the benefit of yourself and those you care about. ■

References

1. Centers for Disease Control and Prevention. School Health Policies and Programs Study (SHPPS) 2006. Overview and summary in Journal of School Health 27(8): 385-397, 2007. Available at <http://onlinelibrary.wiley.com/doi/10.1111/j.1746-1561.2007.00226.x/abstract>. Accessed March 30, 2016.

2. Centers for Disease Control and Prevention. The State of Aging and Health in America 2013. Available at <http://www.cdc.gov/aging/help/dph-aging/state-aging-health.html>. Accessed March 30, 2016.

3. Gilleard C and Higgs P. Frailty, disability and old age: A re-appraisal. Health 15(5): 475-90, 2011.

4. Heart and Stroke Foundation of Canada. 2013 Report on the Health of Canadians—Reality Check: Boomer Dreams for Later Life May Not Come True. Available at <http://www.heartandstroke.com/atf/cf/%7B99452D8B-E7F1-4BD6-A57D-B136CE6C95BF%7D/Report-on-Cnd-Health--D17.pdf>. Accessed March 30, 2016.

5. Iezzoni LI, McCarthy EP, Davis RB, and Siebens H. Mobility difficulties are not only a problem of old age. Journal of General Internal Medicine 16(4): 235-43, 2001.

6. Kraschnewski JL, Sciamanna CN, Ciccolo JT, Rovniak LS, Lehman EB, Candotti C, Ballentine NH. Is exercise used as medicine? Association of meeting strength training guidelines and functional limitations among older US adults. Preventive Medicine 66: 1-5, 2014.



Fitness can be improved at any age. By training—not just “staying active”—older people give themselves the best chance to lead long, fulfilling lives.

7. Schoenborn CA and Heyman KM. Health characteristics of adults aged 55 years and over: United States, 2004-2007. National Health Statistics Report (16): 1-31, 2009.

8. U.S. Department of Health and Human Services. 2008 Physical Activity Guidelines for Americans. Available at <http://health.gov/paguidelines/guidelines/summary.aspx>. Accessed March 30, 2016.

**About the Author** Lon Kilgore earned a Ph.D. from the Department of Anatomy and Physiology at Kansas State University's College of Veterinary Medicine. He has competed in weightlifting to the national level since 1972 and coached his first athletes from a garage gym to national-championship event medals in 1974. He has also competed in powerlifting, the first CrossFit Total event, wrestling and rowing. He has worked in the trenches, as a qualified national level coach or scientific consultant, with athletes from rank novices to the Olympic elite and as a consultant to fitness businesses. He was co-developer of the Basic Barbell Training and Exercise Science specialty seminars for CrossFit (mid-2000s) and was an all-level certifying instructor for USA Weightlifting for more than a decade. He is a decorated military veteran (sergeant, U.S. Army). His illustration, authorship and co-authorship efforts include several best-selling books and works in numerous research journals. After a 20-year professorial career in higher academia, he currently delivers vocational-education courses through the [Kilgore Academy](#), provides online [commentary and analysis](#) of exercise-science papers, and works as a writer and illustrator. He was born in the 1950s and as such he has a vested interest in maintaining fitness and function over the coming decades. He doesn't really plan on retiring—from anything.



# CROSSFIT COUPLE BEATING MS, PREDIABETES

Jackie and Justin Roth use fitness and healthy eating to improve quality of life and reduce disease symptoms, but the discipline and community they found at Mountain Loop CrossFit changed their lives in unexpected ways.



BY HILARY ACHAUER



Jackie Roth was doing her best to prove gym owner Mitch Roehl wrong.

In January 2015, Jackie joined Roehl's Mountain Loop CrossFit in Lake Stevens, Washington, and started working out twice a week.

She continued to drink six Red Bulls and a soda and smoke a pack of cigarettes every day. More often than not, lunch was at Taco Bell or Jack in the Box.

Roehl told 37-year-old Jackie she couldn't outwork an unhealthy diet.

"OK, yeah, sure, watch me," Jackie said she thought.

Jackie desperately wanted to change. She was 100 lb. overweight and had struggled with her weight her entire life. She'd tried diet pills, juicing and human chorionic gonadotropin (HCG) shots, but she would always regain the weight she lost. What Jackie didn't realize was that although a change would require determination, consistency and hard work, she first needed to surrender. She had to wave the white flag, admit defeat and ask for help.

For Jackie, defeat came in the form of a doctor's appointment.

In August 2015, Jackie's feet and legs became so swollen that the indentations remained when she pressed on them. She went to the doctor and discovered she had high blood pressure and was prediabetic.

Finally, Jackie surrendered.

"I emailed (Roehl) and I said, 'You know what? My way isn't working. I'm willing to try whatever you want me to do,'" Jackie said.

Roehl said: "Start showing up."

## "I Feel Free"

While Jackie was dabbling in CrossFit, her husband, Justin, was all in.

Justin, 37, was diagnosed with multiple sclerosis (MS) when he was 21. He walked into Mountain Loop CrossFit in February 2015 using a cane.

He knew the progression: first the cane, then the walker, then the wheelchair.

"I didn't even want to get close to there," Justin said.

Fighting a progressive disease such as MS can be terrifying and isolating. There's no cure, and as the immune system attacks the protective covering of nerves, the nerves can become permanently damaged. Many people with MS slowly lose the ability to walk, and the symptoms grow worse over time.

Roehl had never coached anyone with MS, so after his first meeting with Justin, he did some research.

"It was kind of an eye-opener for me as a coach," Roehl said. "I'm fairly good friends with Jesse Ward and I asked him a few questions. He's coached a few clients with MS. We started with just the complete basics," Roehl said of the CrossFit Inc. Level 1 Seminar Staff member and principal at Lynnwood CrossFit in Washington.

Once Justin finished his on-ramp program and entered regular classes, Roehl said he took off.

"It was amazing," Roehl said, "Jackie would send me videos of (Justin) in the living room practicing his planks. Or he was bound and determined to be able to jump rope. This guy can't even hardly walk sometimes without a cane and he's trying to jump rope. She sends me a video one day of him jumping rope in the house."

## After about eight months of CrossFit, Justin put away his cane.

Justin, a stay-at-home-dad to the couple's 4-year-old son, started coming to the gym six days a week. He began to put on muscle, and soon he was able to easily get his son off to school and give him a bath. In the year he's been doing CrossFit, Justin has gained 25 lb.

"His balance and strength (have) improved. He is walking better than he has in years," Roehl said. "He's a really big inspiration to everybody else as well in the gym. You can only imagine seeing somebody go from where he was to now."



Affiliate owner Mitch Roehl (left) shares the love with clients Jackie Roth (center) and Justin Roth, both of whom have improved fitness dramatically in the last year.

Mountain Loop CrossFit



Roehl keeps a careful eye on Justin, making sure he doesn't push too hard.

"He is probably the hardest-working guy in the gym. Sometimes I have to come over there and say, 'Justin, slow down.' For the last five or six years he hasn't been able to be part of much. So I know for him he just loves being a part of it. He's the first one to grab a mop and clean up," Roehl said.

After about eight months of CrossFit, Justin put away his cane.

"I feel more independent. I feel free. I don't have a restriction of having a cane," Justin said. "There's no words really how appreciative I am of fitness and CrossFit."

## Commitment and Results

Meanwhile, Jackie, who works full time as a chemical-dependency counselor, was taking action.

"I was diagnosed with prediabetes, and I came home with these medications (for diabetes and high blood pressure), and so I started. I started showing up. I started two days a week, three days a week. Now I go six days a week," Jackie said.

Before that, Jackie used her twice-weekly workouts as a license to eat whatever she wanted.

"I was like, 'Well, I've worked out. I'm sure I've burnt enough calories to eat this pie and these cookies and all this other garbage,'" she said.

While eight months of twice-weekly CrossFit workouts had improved her strength, her health was in dire shape.

So Jackie quit everything.

She removed the junk food from the house. She replaced the Red Bulls and soda with water. She stopped smoking. To provide some structure and external motivation, Jackie signed up for the Lurong Living Challenge, a five-week nutrition-and-fitness challenge.

Jackie and Justin learned how to prepare healthy food in advance. On Sundays, they made egg-and-vegetable "muffins" for breakfast and cooked food ahead of time so a healthy meal would be as easy as a stop at Jack in the Box. Jackie made sure she always had fresh fruit and vegetables in the house.

Just as important, Jackie accepted she wouldn't always achieve perfection.

"I still struggle every day. There's days I eat like crap, there's days I do really well. And my main thing is I don't get down on myself any more about it. If I have a cheat day, I have a cheat day as long as it doesn't turn into a cheat week and a cheat month. Really getting the whole family in on eating healthy has really helped," Jackie said.

With both Jackie and Justin on board, workouts became a team effort.

"We work out every day at 4:30 p.m. and Saturday at 9:30 a.m. We pack the kid up and we go," Jackie said.

Since August, Jackie has lost about 20 lb. Her clothes fit better, she's stronger, and she doesn't get as winded during workouts.

After her disastrous check-up in August, Jackie started taking blood-pressure medication but decided not to take her diabetes medicine, hoping her lifestyle changes would do the trick.

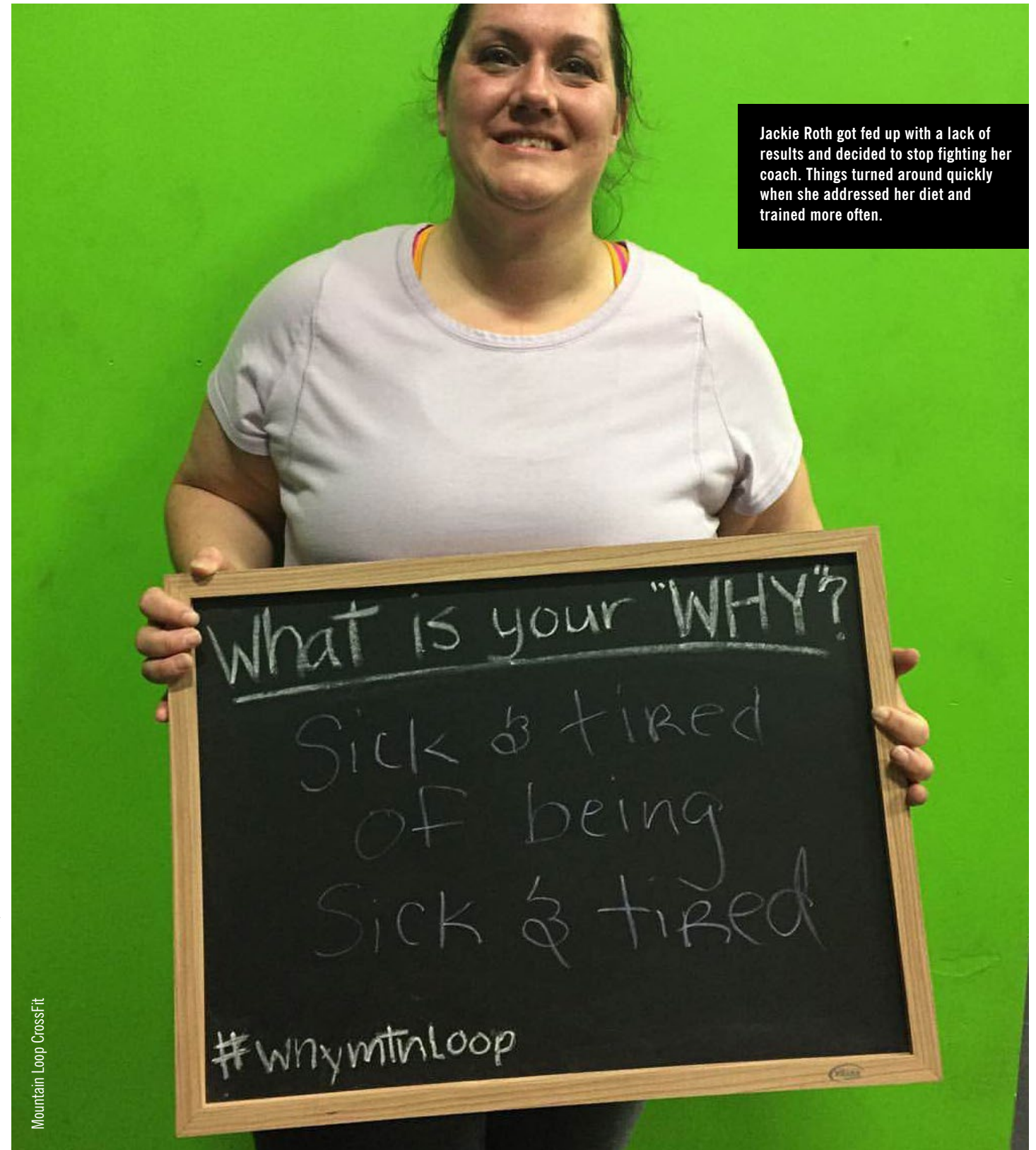
On Feb. 5, 2016, Jackie went back to her doctor.

The results were good. Jackie's blood pressure had dropped from 152/84 in August to 122/82, almost in the normal range of 120/80. In August, her A1C test, which measures the average blood glucose for the past two to three months, was 5.8 percent. According to the American Diabetes Association, a prediabetes range is 5.7 to 6.4 percent. Six months later, off the Red Bull and soda, Jackie's A1C numbers dropped to 5.6 percent, taking her out of the prediabetic range.

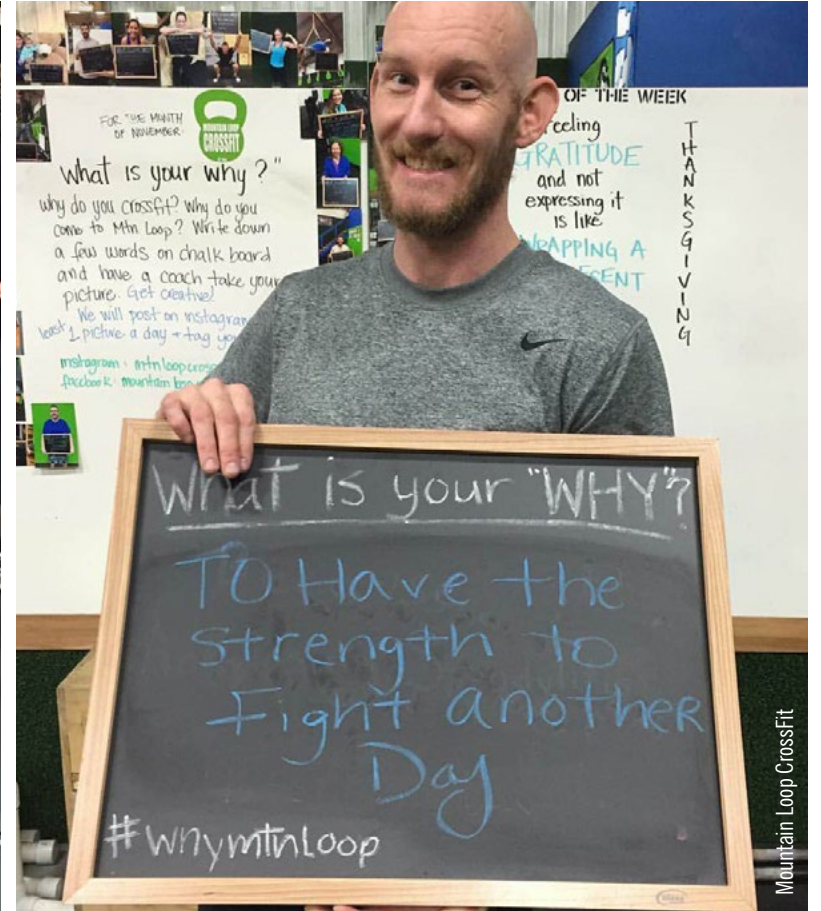
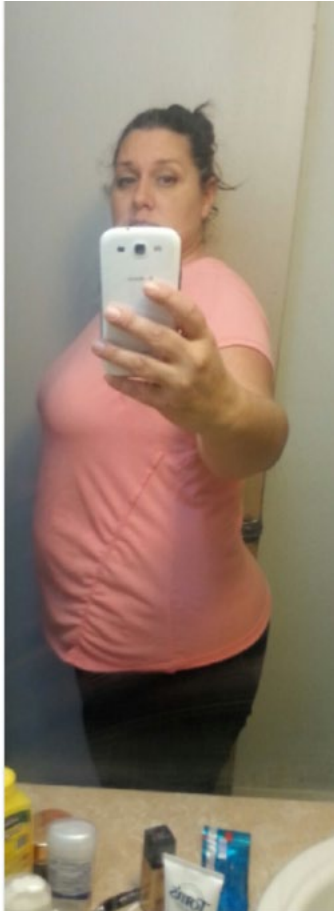
Jackie will continue taking blood-pressure medication, but she achieved the change in blood glucose without medication.

Since August, Jackie has lost about 20 lb. Her clothes fit better, she's stronger, and she doesn't get as winded during workouts. Justin's cane is gathering dust, and he's continuing to build muscle and gain strength.

Jackie Roth got fed up with a lack of results and decided to stop fighting her coach. Things turned around quickly when she addressed her diet and trained more often.







Before and after pictures of Justin and Jackie. He gained about 25 lb. of muscle in a year, and she's down 20 lb. since August.

"There's no words really how appreciative I am of fitness and CrossFit." —Justin Roth

The two have seen other benefits of their new, healthy habits.

"We work as a team now. We communicate better. There's just the community of CrossFit and everybody cheering everybody on—I've really taken that in my life and put it towards my parenting and my relationship with my husband. Everything flows," Jackie said.

## Acceptance and Hope

When Jackie started CrossFit, she was showing up but she wasn't all there.

"About six months ago, she got over how cool CrossFit is," Roehl said. "She realized it's not just cool; she has to work really hard. It's not just wearing the Nanos and stuff."

Other members noticed.

"I've gotten numerous emails in the last couple months saying, 'Jackie is the one that's motivating me to be more consistent,'" Roehl said. "She's been knocking it dead. The intensity level of her workouts (is) so much better."

Justin's battle was different but no less transformative.

"I really didn't think much of life back then," Justin said of his state of mind before starting CrossFit.

"My strength and balance have improved a lot," he said.

Justin also found a community where he felt welcomed and accepted. He said people at Mountain Loop CrossFit don't see his limitations. They just see possibility.

"Being treated differently, there's none of that. It's unbiased. It's great," Justin said. "CrossFit is great. Nothing compares to the feeling of it, the community. It's like acceptance no matter what."

A year ago, Jackie and Justin were struggling. He was using a cane, and she was consuming more than 50 teaspoons of sugar a day—about 44 more than the World Health Organization recommends—eating fast food and smoking.

They tried fighting on their own, doing what they'd always done. But once they put themselves in the hands of Mountain Loop CrossFit, surrendering to the coaches and the community, things started to change.

"Somebody needs to hear it's OK to have all this crap going on but it's OK to take care of yourself," Roehl said. ■

**About the Author:** Hilary Achauer is a freelance writer and editor specializing in health and wellness content. In addition to writing articles, online content, blogs and newsletters, Hilary writes for the CrossFit Journal. To contact her, visit [hilaryachauer.com](http://hilaryachauer.com).