

## THE BIG IDEAS

### Processed Carbs

Light up your nucleus accumbens.

### Low-Fat Diets

Are not the answer. (Science says.)

### Learning

Is best w/out processed carbs.

### Three Phases

To change your life.

### The Passeggiata

+ Life supports.

*"The usual 'eat less, move more' approach misses the root cause of weight gain, produces side effects, and is destined to fail for most people. In this way, low-calorie diets may actually make matters worse."*

~ David Ludwig

# Always Hungry

Conquer Cravings, Retrain Your Fat Cells, and Lose Weight Permanently

BY DAVID LUDWIG, M.D., PH.D. · GRAND CENTRAL LIFE & STYLE © 2016 · 384 PAGES

"Most weight loss programs require you to cut back on calories. This one won't.  
Many expect you to endure hunger. This one doesn't.  
Some require grueling workouts. Not this one.

That's because the program in this book, the Always Hungry Solution, uses a radically different method of weight control, based on decades of groundbreaking, but little-known research.

Conventional diets aim to shrink body fat by restricting calorie intake. But this approach is doomed to fail in the real world, because it targets the symptoms, not the root cause of the problem. After a few weeks of calorie restriction, the body fights back, and makes us feel hungry, tired, and deprived. Though we may be able to ignore these unpleasant feelings for a short while, they inevitably erode our motivation and willpower. Sooner or later, we succumb to temptation and the weight comes racing back—often leaving us heavier than before we started the diet.

The Always Hungry Solution turns dieting on its head, by ignoring calories and targeting fat tissue directly. Using the right types and combinations of foods (and other supportive techniques related to stress reduction, sleep, and enjoyable physical activities), this approach reprograms fat cells to release their stored calories. When this happens, the pent-up calories flood back into the body, shifting metabolism into weight loss mode. You'll experience a surge in energy levels and dramatically increased satiety—that pleasant sense of fullness after eating. You'll feel good, and begin to lose weight without hunger or cravings."

~ David Ludwig, M.D., Ph.D. from *Always Hungry*

David Ludwig is a professor and researcher at both Harvard Medical School and Harvard School of Public Health.

He has both an M.D. and a Ph.D. and is one of the world's leading researchers on the science of optimal nutrition. He's overseen dozens of diet studies, authored over 100 peer-reviewed scientific articles, and supported thousands of patients looking to optimize their weight. (*Time* magazine describes him as an "obesity warrior.")

This book is, as the sub-title suggests, a thorough look at the underlying science of how to conquer cravings, retrain your fat cells, and lose weight permanently combined with an equally thorough three phase plan for doing so. (Get the book [here](#).)

If you've tried a ton of diets with mixed success, you might REALLY like this evidence-based, moderate approach to sustainable weight loss.

As you can imagine, it's packed with Big Ideas. I'm excited to share some of my favorites so let's jump straight in!

## PROCESSED CARBS & LIGHTING UP YOUR NUCLEUS ACCUMBENS

*"Foods with similar nutrients can affect hormones and metabolism in profoundly different ways, determining whether we store or burn calories, build fat or muscle, feel hungry or satisfied, struggle with weight or maintain a healthy weight effortlessly, and suffer from or avoid chronic inflammation."*

~ David Ludwig

"The results were published in the *American Journal of Clinical Nutrition*. Similar to our first study, blood glucose and insulin levels were higher after the fast-acting milkshake for the first hour or two. But by four hours after consuming the fast-acting shake, blood glucose fell to lower levels and reported hunger was greater, compared to the slow-acting shake. At that time, we conducted brain imaging scans, using a technique called functional magnetic resonance imaging (fMRI). The scans detected one brain region, called the nucleus accumbens, that lit up like a laser after the fast-acting shake. The effect was so strong and consistent, it occurred in every one of our participants, providing strong statistical confidence in the results. The nucleus accumbens is considered ground zero for reward, craving, and addiction—including alcohol, tobacco, and cocaine abuse. Activation of this brain region on a weight loss diet would erode willpower, making that sticky bun exceedingly hard to resist.

The concept of food addiction is controversial because, unlike substances of abuse, we need food to live. However, this study suggests that highly processed carbohydrates may hijack basic reward circuitry in the brain, not because they are inherently so tasty (both milk shakes had the same sweetness), but instead because of direct actions on metabolism. Hunger is hard enough to fight under any circumstances, but once the nucleus accumbens joins in, it's all over."

One of the most important underlying themes of the book is the fact that all calories are NOT created equal.

One of the dominant hypotheses among nutrition experts has been what is called the *energy balance hypothesis* in which, as the thinking goes, we simply need to balance the "calories in" with the "calories out." Following this logic, we are told to eat less and exercise more and voilà! Ideal weight.

That would be AWESOME if it worked. But, alas, it DOESN'T.

And David Ludwig is one of the primary researchers to scientifically prove that it's not quite that simple. (Although calories DO act the same in a vacuum, our bodies are \*not\* a vacuum...)

Bottom line is this: Different types of calories effect us differently.

Rather than the *energy balance hypothesis* of calories in, calories out, the more nuanced (and accurate) approach is described as the *hormonal* or *metabolic hypothesis*. In this model, we recognize and account for the different effects different types of calories have on our insulin + metabolism.

In the research study above, Ludwig demonstrated this metabolic hypothesis by bringing twelve men with high BMI into his lab and giving them two different kinds of milk shakes—one containing corn syrup (a highly processed and fast-acting carbohydrate) and the other containing uncooked cornstarch (a slow-acting carbohydrate). Otherwise, the milk shakes were the same—with the same number of calories (important!), the same breakdown of fats, proteins, and carbs and similar sweetness (controlled for by artificial sweeteners).

Then what happens?

Well, blood sugar rises more rapidly with the fast-acting, more highly processed carbs and then drops more significantly after a few hours. AND, when placed in an fMRI after eating the fast-acting carbs we can see that our addiction centers known as the nucleus accumbens lights up "like a laser." (<— Amazing.)

So, in addition to making you hungrier, you're also now craving more of the fast-acting carbs. Not a winning combo.

Compound that over an extended period of time? Enter: Metabolic disorders.

*"Ironically, the standard treatment for diabetes since the 1970s has been a low-fat, high-carbohydrate diet—the same diet that contributes to the problem in the first place! We wouldn't give milk sugar lactose to someone with lactose intolerance. What's the sense in giving so much carbohydrate to someone who, by definition, has carbohydrate intolerance?"*

~ David Ludwig

*"Highly processed carbohydrates are among the lowest-quality components of the food supply, accounting for the majority of diet-related disease in the United States today—they're highly concentrated in calories but devoid of real nutrition."*

~ David Ludwig

Hence, Phase I of the program is to CONQUER YOUR CRAVINGS. You do this by removing the ultraprocessed carbs from your diet. More on that in a moment. First, a little more science.

## SCIENCE SAYS: A LOW-FAT DIET IS NOT THE ANSWER

"For fifty years, we've been told that a low-fat diet would protect us against chronic diseases. That notion inspired the Women's Health Initiative clinical trial which started in 1991 (whose disappointing results were discussed in chapter 2) and also informed the design of the Look Ahead study, launched a decade later. The goal of Look Ahead was to reduce heart disease, a common complication of diabetes. The study, conducted in sixteen clinical centers in the United States, assigned about five thousand adults with type 2 diabetes to either a low-fat diet with intensive lifestyle modification or to usual care. The study, published in the *New England Journal of Medicine* in 2013, was terminated prematurely for 'futility.' Analysis by independent statisticians found *no* reduction of heart disease among participants assigned to the intensive low-fat diet, and *no* prospect of ever seeing such a benefit emerge.

By coincidence, another study called PREDIMED was published in the same prestigious journal the very same year. This study assigned about seven thousand five hundred Spanish adults with heart disease risk factors to one of three diets: Mediterranean with lots of olive oil, Mediterranean with lots of nuts, or a conventional low-fat diet. The interventions did not involve a calorie restriction or weight loss goal. PREDIMED was also terminated early, but in this case because effectiveness *exceeded* expectations. Both higher fat groups had such significant reductions in cardiovascular disease (about 30 percent) that continuation of the trial would have been unethical for the participants in the conventional group.

These two recent studies should seal the coffin on the standard low-fat diet. More broadly, they show that modest improvements in diet—specifically, more fat and less processed carbohydrates—can prevent obesity-related disease at any body weight. A high-quality diet seems to calm down 'angry fat' even without weight loss. With weight loss, the health benefits could be huge."

Another one of the most prevalent myths (that goes hand-in-hand with the calories in, calories out) approach, is the idea that low-fat diets are the way to keep fat off our bodies.

But that just isn't true.

Michael Pollan (who acknowledges David Ludwig as his #1 go-to researcher in his book [Food Rules](#)) puts it this way: "The forty-year-old campaign to create low- and nonfat versions of traditional foods has been a failure: We've gotten fat on low-fat products. Why? Because removing the fat from the foods doesn't necessarily make them nonfattening. Carbohydrates can also make you fat, and many low- and nonfat foods boost the sugars to make up for the loss of flavor. Also, by demonizing one nutrient—fat—we inevitably give a free pass to another, supposedly 'good,' nutrient—carbohydrates in this case—and then proceed to eat too much of them instead. Since the low-fat campaign began in the late 1970s, Americans actually have been eating more than 500 additional calories per day, most of them in the form of refined carbohydrates like sugar. The result: The average male is seventeen pounds heavier and the average female nineteen pounds heavier than in the late 1970s. You're better off eating the real thing in moderation than bingeing on 'lite' good products packed with sugars and salt."

(Note: via the fMRI studies, we also know that carbs trigger cravings.)

As Ludwig tells us: Low-fat diets have not worked. P.E.R.I.O.D. His perspective? Those two recent studies referenced above "should seal the coffin on the standard low-fat diet."

Let's bring this wisdom home to your breakfast table as you and/or your kids decide what to eat. On that note, let's take a quick look at what science says relating to the impact of fast-acting carbs on school performance, focus, learning, etc.

*"Meals with the same calories can produce dramatically different outcomes a few hours later."*

~ David Ludwig

## WHAT \*NOT\* TO EAT IF YOU WANT TO OPTIMIZE YOUR LEARNING

"In a carefully controlled feeding study, researchers from the University of Wales in the United Kingdom gave seventy-one female undergraduates slow- or fast-digesting carbohydrate-based breakfasts and then tested their cognitive functioning. They found that memory, especially for hard words, was impaired throughout the morning after the fast-digesting breakfast. This effect was most pronounced several hours after the meal (a 33 percent deficit). Similar results were obtained in Toronto among twenty-one patients with diabetes. Following a meal with fast-digesting carbohydrate, verbal memory performance, working memory, selective attention, and executive function were worse compared to a meal containing the same amount of carbohydrate in slow-digesting form.

These cognitive deficits in children and young adults, if persistent, may lead to a diagnosis of attention-deficit disorder (ADD). Of course, there are many reasons why kids today may have difficulty concentrating, ranging from too much screen time to too little sleep. But these and other studies suggest that overconsumption of highly processed carbohydrates could be contributing to the problem."

What did *you* (and/or your kids!) eat for breakfast this morning?

Science says the faster-acting the carbs, the worse off you'll be.

Dr. Ludwig walks us through the typical breakfast recommended by the Food Guide Pyramid ("whole-grain" bagel with fat-free cream + 100% orange juice) and how disastrous it would be for a twelve-year-old kid heading off to school.

The effects of fast-acting carbs, if persistent, may lead to a diagnosis of ADD.

Let's lay off the ultraprocessed fast-acting carbs as we enter Phase I of Ludwig's plan!

## THE THREE PHASES TO CHANGE YOUR LIFE

*"You'll completely abandon the calorie-counting approach to weight loss. Instead, you'll focus on eating the right foods in the right combinations to reprogram fat cells so they release their excess calorie stores.*

*The fastest way to do this is by replacing refined carbohydrates (the primary driver of insulin secretion) with fat, and achieving the right proportions of unprocessed carbohydrate and protein at meals and snacks."*

~ David Ludwig

"Standard low-fat diets aim to squeeze calories out of fat cells by restricting calorie intake. But after a few weeks of deprivation, hunger skyrockets and metabolism slows. The problem is, cutting calories does nothing to address the underlying cause of weight gain.

The Always Hungry Solution targets weight gain at its sources—fat cells stuck in calorie-storage overdrive. By decreasing insulin levels and calming chronic inflammation, we can reprogram fat cells to release excess calories. When this happens, hunger diminishes, cravings subside, metabolism speeds up, and you lose weight naturally.

We'll do this through three progressive phases:

- Phase 1—A two-week boot camp to conquer cravings and jump-start weight loss.
- Phase 2—A hunger-free plan to retrain your fat cells and reach your new, lower body weight set point. This can last anywhere from several weeks to six months or more, depending upon how much weight you have to lose.
- Phase 3—A customized diet for your body's unique needs so you can keep the weight off permanently."

Alright. So, at this stage, we're clear on the fact that the fast-acting, "ultraprocessed" carbohydrates have not been helping us optimize our health, weight, metabolism, etc.

So, in Phase 1 of his program (the first 14 days), Dr. Ludwig has us completely eliminate all higher glycemic load foods such as grains, potatoes and added sugar WHILE eating non-starchy veggies + greens, legumes, and (non-tropical) fruits PLUS a lot of healthy fats like those found in olive oil, nuts, avocado, etc.

Target of this phase? Conquer Cravings. We want to reboot our metabolism and cool off our cravings center (remember our nucleus accumbens in the fMRI after eating fast-acting carbs?).

After Phase 1's removal of all grains, etc., we add back whole grains + lower glycemic load foods.

Phase 2's focus? Retrain Your Fat Cells. This phase can last anywhere from 2 to 6+ months.

Then Phase 3: Lose Weight Permanently. Obviously, get the book for the details!

## THE PASSEGGIATA + LIFE SUPPORTS

*"Nothing says 'starting over' like a kitchen purged of unhealthy foods and restocked with nutritious ingredients. Let's clean out your kitchen so you'll have space for all the delicious and nutritious foods to come."*

~ David Ludwig

"If weight loss were simply a question of calories in and calories out, you could spend 20 grueling minutes on a treadmill, but a handful of raisins (just 1/2 cup) would negate all your hard work. Thankfully, in addition to burning a modest number of calories, physical activity also improves insulin resistance, setting the stage for weight loss. You needn't work out for hours for these effects. A study involving older adults at risk for diabetes found that three 15-minute walks after meals improved their ability to regulate blood sugar for the following 24 hours. These three short walks were at least as effective as one long 45-minute walk taken during the day. The habit of taking multiple walks during the day also gets you up and away from your desk or couch, and may lower stress levels.

Italians have a name for this type of walk: the *passeggiata*. You won't see anyone wearing a pedometer or spandex during an Italian *passeggiata*—these walks are purely for pleasure, to get outside and see the neighbors, to reconnect as a family after a long day, and to enjoy the last bit of sunlight. The movement and light that you take in during your *passeggiata* before nightfall can also recalibrate your body clock. The *passeggiata* is a moment of joyful movement that helps support healthy digestion and insulin action, while simultaneously relieving stress and helping you sleep better.

No matter how fit you are, the *passeggiata* can reintroduce you to movement in a pleasurable, easy, stress-relieving activity—not a chore to be sweated out and endured."

The *passeggiata*.

That's from a section in which Dr. Ludwig walks us through what he calls "Life supports"—helping us get better sleep, move more, and manage our stress better while optimizing what we eat. We'll talk more about that in a moment.

For now, let's notice the parallels between his advice and the wisdom we've explored from Michelle Segar and Katy Bowman.

Ludwig tells us: "*the passeggiata can reintroduce you to movement in a pleasurable, easy, stress-relieving activity—not a chore to be sweated out and endured.*"

Michelle Segar named her book "[No Sweat](#)" to talk about precisely this perspective. AND... She tells us we need to move from seeing our movement as a "chore" we have to grit our teeth through to seeing it as a "gift" we give to ourselves to catalyze our energy and well-being.

No sweat required. (Although, of course, sweat IS a good thing as well! :)

Then we have Katy Bowman. In [Don't Just Sit There](#) and [Move Your DNA](#) she walks us through the power of getting up and walking THROUGHOUT the day—echoing Ludwig's wisdom of the virtue of three 1-mile walks vis-a-vis one 3-mile walk.

She even encourages us to get up and go for a 3-minute walk every half an hour. Although I'm not walking every time, I've got my perpetual motion machine timer counting down and getting me up and moving every 20 minutes. And, my new walking target is five mini+ walks every day en route to 10,000+ steps more evenly spaced throughout the day. Love the idea of timing them for after meals! And, always nice with the fam.

*"And remember, the fleeting moments of pleasure from eating poor-quality food pale in comparison to the enduring rewards of feeling good."*

~ David Ludwig

And... Now it's time for one of those little walks. (Ahhh... Mr. Z and I are back.)

(What about you? How about adding some *passeggiatas* to your life? (... *Now good?* :))

So that's our *passeggiata*—a core part of optimizing our movement as we reboot our metabolism. Now for a quick look at the other Life Supports Ludwig weaves through each phase:

**Sleep:** As per our discussion in [Sleep 101](#), Ludwig tells us: *"Remember that sufficient high-quality sleep is one of the best things you can do to tune up your metabolism and safeguard your health."*

**Stress Relief:** Ludwig advises us to take at least 5 minutes (building up to 20+) every day to center ourselves via meditation, taking a short walk in nature, reading inspirational poetry, *"Anything to disconnect from the frenetic outside world and soothe your nervous system. No matter how busy your day is, you deserve a few moments to yourself."*

**Your Big Why:** Take some time to get clear on WHY you're excited to optimize. *"Your Big Why should center on the most important issues in your life—lifelong goals, relationships with loved ones, your highest aspirations for the future."* We want to keep this front and center!

**If-Then Plans:** We know if-then plans are HUGE! You *\*will\** experience challenges. What will you do? Think about it in advance. If this happens, then I will do this...

... Well, that is a *\*super\** quick look at this great book.

If you're looking for a evidence-based approach to conquering your cravings, retraining your fat cells and losing weight permanently I think you'll dig it!

Here's to optimizing!

B

**Brian Johnson,**  
*Heroic Philosopher CEO*

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you'll probably like...**

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[Food Rules](#)

[Clean Gut](#)

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## About the Author of This Note

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