

Experiments with Intermittent Fasting

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WITH DR. KRISTA SCOTT-DIXON AND NATE GREEN

PrecisionNutrition



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SUMMARY

All About Intermittent Fasting, in Under 10 Minutes

A growing number of experts claim short fasts can accelerate fat loss and make you healthier. So we spent 6 months testing the most popular Intermittent Fasting (IF) protocols ourselves. Find out what IF is, whether you should do it, and if so — *how*.

For years, Dr. John Berardi, Chief Science Officer of Precision Nutrition, has advocated frequent meals, spaced 3-4 hours apart, consisting of nutrient-dense, healthy food. That strategy — when combined with a smart exercise program and world-class coaching — has helped thousands of our clients drop over 120,000 pounds of fat in the last ten years.

Proponents of IF, on the other hand, eschew the idea of eating so frequently. Many claim to have achieved quicker fat loss and better health by deliberately skipping meals and sometimes going entire days without eating.

The IF research is still in its infancy — indeed, it may be 5-10 years before it reaches critical mass and becomes a mainstream nutritional idea — but in certain quarters, the benefits of intermittent fasting have reached almost mythical proportions.

With research lagging behind at a snail's pace, but enough anecdotal evidence to go off of, we decided to do what we do here at Precision Nutrition: *test it ourselves*.

Here's what Dr. Berardi found, in his own words.

WHY EXPERIMENT WITH INTERMITTENT FASTING?

I'm a professional dieter. In other words, I've done nearly *every* diet or nutritional protocol that's around to test its efficacy.

Intermittent fasting has a very small, yet strong, following and enough research to pique my curiosity. I wanted to test it myself to see what kinds of physiological and psychological changes would come from it.

Also, as a competitive, masters-level track athlete and life-long fitness enthusiast, I wanted to test a new way to drop fat and get extremely lean, while staying strong and powerful.

WHAT DID YOU TEST?

Since there isn't one definitive intermittent fasting protocol, I decided to test six different methods over the course of six months.

I kept meticulous notes on everything from scale weight, body-fat percentage, and blood/hormonal markers, to lifestyle markers like energy levels, cognitive thought, and pain-in-the-ass factors.

WHAT HAPPENED?

Over the course of six months, I dropped twenty pounds of weight, from 190 pounds to 170 pounds. I also reduced my body fat from 10% to 4% while maintaining most of my lean muscle mass. Finally, I found two intermittent fasting strategies that I could follow indefinitely with no problem.

Simply, I accomplished the goals I set for myself in a way that was easier and less time-consuming than "traditional" dieting.

WHAT ARE THE BIG "TAKEAWAYS"?

I think there are four main takeaways that readers of this book should come away with.

- 1. Trial fasting is a great way to practice managing hunger.** This is an essential skill for anyone who wants to get in shape and stay healthy and fit.
- 2. More regular fasting isn't objectively better for *losing* body fat.** While my IF experiments worked quite well, the intermittent fasting approach (bigger meals, less frequently) didn't produce better fat loss than a more conventional diet approach (smaller meals, more frequently) might have.
- 3. More regular fasting did make it easier to *maintain* a lower body fat percentage.** Intermittent fasting isn't easy. However, I did find that using this approach made it easier for me to maintain a low body weight and a very low body fat percentage vs. more conventional diets.
- 4. Intermittent fasting can work but it's not for everyone, nor does it need to be.** In the end, IF is just one approach, among many effective ones, for improving health, performance, and body composition.

SO INTERMITTENT FASTING IS GOOD, BUT NOT NECESSARY?

Exactly.

Intermittent fasting can be helpful for in-shape people who want to really get lean without following conventional bodybuilding diets, or for anyone who needs to learn the difference between body hunger and mental hunger. (And for the latter, I only recommend the Trial Fast.)

It's a helpful tool and one I'll continue to use periodically. But it's not the end-all, be-all of nutrition or fitness. People have been getting in awesome shape — and staying in awesome shape — for decades without the use of intermittent fasting.

HOW ARE IF AND "GRAZING" SIMILAR?

Successful nutrition plans, whether they use smaller, more frequent meals or larger, less frequent meals all share a few commonalities. These include:

- 1. Controlling calories.** When calories are controlled, progress is made. Whether you control them by eating frequent small meals or infrequent larger meals is up to you.
- 2. Focusing on food quality.** Fresh, unprocessed, nutrient-dense food is a must, regardless of which eating style you adopt.
- 3. Regular exercise.** Exercise is a critical part of the equation.

Once those three have been taken care of, it's a matter of personal preference and lifestyle considerations.

I'D LIKE TO LEARN MORE. WHAT'S NEXT?

Have 10 minutes? Read Appendix A. It's a cheat sheet that shows you exactly how to do intermittent fasting, including specifics on our three favorite protocols.

Have 30 minutes? Read about the individual fasts in Chapters 4, 5 and 6. Then read the cheat sheet in Appendix A. Then check out Appendix B for some tips and tricks we learned along the way.

Have an hour or two? Read the entire Experiments with Intermittent Fasting book. We spent a lot of time researching, conducting the experiments, and writing. We'd love to share it with you and hear your thoughts.

INTRODUCTION

Hi, My Name is John. And I Haven't Eaten in 24 Hours.

**I haven't eaten anything in 24 hours. Am I starving?
Craving something to eat? Well, no, not really. I'm just
mildly hungry.**

It's weird. You know that hunger feeling you get about 4-5 hours after your last meal? Where your stomach's reminding you that it's been a while? I'm not even that hungry.

I've learned that hunger peaks at that point and immediately diminishes. After a while, even if you haven't eaten, you get less hungry.

About 20-24 hours later, hunger comes back again. But never as bad.

There's a good scientific reason for this hunger wave, although my hunger wave is probably different than yours. The explanation has to do with hormones like epinephrine, norepinephrine, insulin, glucagon, leptin, and ghrelin, and how our organs respond to these hormones. But this isn't a biochemistry text. Let's skip the heavy science.

If you're a fitness-conscious person – whether you graze on small meals throughout the day or eat three squares like clockwork – the thought of fasting for an entire day might scare the hell out of you.

Most active people start to freak out about 4-5 hours after their last meal.

“Somebody sound the alarms! If I don't eat soon, I'm gonna...”

You're gonna... what? Explode? Die of starvation? Shriveled up and lose all your muscle mass?

Actually, none of these happen. In fact, you might even *lose* a little body fat.

New research suggests that a short, periodic fast might actually rev up your fat-burning machinery while helping you control glucose and insulin. Important hormonal changes mean that fasting might even help your muscles grow when the next exercise session (and meal) comes. You might lose *more* fat and gain *more* muscle, all by skipping a few meals.

But even if you don't lose extra fat by fasting, I promise you *will* lose something important: that ridiculous, unarticulated fear of not eating every few hours. And damn

it, that's liberating.

(Don't worry, you can still eat every few hours – most of the time – if that's what works best for you.)

And even if you don't gain any extra muscle, you'll gain something more important: perspective. I know I did. You see, I've been experimenting with various fasting ideas for the last 6-months.

The one-day fasting experience

It started as a one-off assignment, part of a fat loss coaching program Precision Nutrition offers called the Lean Eating coaching program.

Each year, we work with nearly 3,000 men and women. We provide them with workout programs, nutrition habits, daily lessons, and assignments, all designed to help them achieve the best fat loss results of their lives.

The program works. To date, more weight has been lost in the Lean Eating program than in all 11 seasons of The Biggest Loser combined. Lean Eaters have gained lean muscle mass, shed thousands of pounds of fat, enhanced their health profiles, and improved their lives.

Anyway, one of our Lean Eating assignments is to go a full 24 hours without eating. It's scary, and it makes people uncomfortable... which is *exactly* why we do it.

It's not just a random "don't eat" instruction. There's a specific plan. Assuming you're going to fast on a Sunday (and assuming you'd like to try it), here's what to do:

10 PM SATURDAY:

- Eat your last meal of the day
- Drink 500 mL (2 cups) of water

10 AM SUNDAY:

- Drink 1 L (4 cups) of water + 1 serving greens powder
- Drink 250 mL (1 cup) of green tea
- Take 5 grams BCAA (branched chain amino acids) powder (or take 5 capsules)

3 PM SUNDAY:

- Drink 1 L (4 cups) of water + 1 serving greens powder
- Drink 250 mL (1 cup) green tea
- Take 5 grams BCAA (branched chain amino acids) powder (or take 5 capsules)

10 PM SUNDAY:

- Eat a small snack before bed
- Drink 500 mL (2 cups) of water

MONDAY:

- Eat normally.

What's the point of this exercise? Why "starve" yourself for a day? Here's what people learn when they do our fasting assignment for the first time:

HUNGER IS NOT AN EMERGENCY

Many people think hunger is an emergency and panic when it kicks in. But hunger is just a *feeling*. Commit an entire day to fasting, and you'll realize that hunger really isn't something to panic over. Nothing really bad happens if you miss a meal or two. After all, our prehistoric ancestors didn't have a Taco Bell on every corner. We evolved to deal well with hunger. Allow yourself to get hungry. Then sit with the feeling rather than trying to make it go away immediately.

PHYSICAL VS. PSYCHOLOGICAL HUNGER

Often when people think they're hungry, they're not experiencing true physiological (body) hunger, but rather psychological (head) hunger. The better you know the difference between the two, the better you understand your body's signals. By the end of the day, you'll feel real body hunger. In the future, use that feeling as a reference point to interpret your appetite correctly.

EATING AS A PRIVILEGE

I'm the Director for a non-profit called The Healthy Food Bank. We raise funds and food for food banks throughout North America. Most of that goes to families who are "food-insecure." They're not people sleeping on sewer grates. They're people who are barely scraping by. They have food, just not enough to feed their kids every meal, every day. Taking a day to fast reminds us that there are people out there who fast regularly - not voluntarily - but because they don't have food. We're reminded that eating is a privilege.

EATING AS A RESPONSIBILITY

Eating is also a responsibility. When we cram our bodies full of fast, processed, low-quality food, we're not taking that responsibility very seriously. A day without food resets our perspective. We can remember to not take eating for granted.

FOOD MARKETING

Food advertising and marketing often flies under our radar when we're fed. But that's exactly what makes it so effective: It works on our subconscious. When fasting, everything changes. Food marketing jumps out at us. We're aware of the manipulation. With awareness comes power. No more mindless junk food runs prompted by billboards or radio commercials. Now you're in control.

As you can see, there are many benefits to a single day, trial fast; most of which are psychological. But we're only scratching the surface here. There are physiological ones, too.

The cool part? You don't have to be an "intermittent faster" or follow some wacky diet plan to experience these benefits. All you have to do is *not eat for one day*. Then you can get back to normal... although I suspect your "normal" will be a little different afterward.

My "normal" has changed dramatically since my first Lean Eating-inspired fasting experiment.

WHAT TO LOOK OUT FOR

If you'd like to try this, be aware that you'll be hungrier than usual when you start eating again Sunday night and Monday. Plus, it's easy to play little games like "rewarding" yourself for having such a low calorie day on Sunday. This combination means it's easy to overeat – either leading up to the fast or after the fast – if you're not paying attention. So pay attention.

On the other hand, if you're a diet junkie, you might think, "If Dr. Berardi says one day of fasting is good, five must be awesome!" Don't do that either. Remember, this fast is short, it's intermittent, and – in this case – it's a one-time thing.

In other words: Eat normally for the week. On one day, don't eat for a little while. That's all.

In fact, over the last year I've put at least half a dozen different fasting protocols to the test, recording everything along the way. Nearly every week, I've tried some fasting-related strategy and recorded the results.

This book explores that journey.

Now, if you're expecting a master's level dissertation on the science of fasting intermittently, you won't find it here. Although I'm a scientist by training, I only briefly touch on the research behind IF in this book.

You see, this project isn't about an idea or a concept. And it's certainly not about isolated laboratory research. Instead, this project is about putting ideas to the test in real life, in *my* life, through something I highly value: self-experimentation.

This is where theory meets empty-stomach reality.

CHAPTER 1

Science or Fiction? Exploring the Benefits of Intermittent Fasting

Intermittent fasting (IF) is the name some nutrition experts give to the practice of occasionally going for extended periods without eating. This fancy name implies that IF is the exclusive domain of the nutritional elite. It's not. In fact, we all do some form of IF every single day, except we don't call it that. We call it *sleeping*.

The time from your last meal at night until your first meal the next day (assuming a typical sleep-wake cycle) makes up your “fasting” interval. And the time from your first meal of the day until your last meal makes up your “feeding” interval.

Put in simple terms, if you typically eat dinner by 8 PM and breakfast at 8 AM the next day, you're fasting for 12 hours and feeding for 12 hours. Some people refer to this as a 12/12 fast. I know it's weird to give complicated names and numbers to normal patterns of eating and sleeping, but trust me, these will come in handy in a second.

For now, I'd like to talk about why IF is getting so much press.

When history meets research

Intermittent fasting is nothing new. Humans have fasted for most of their history, whether it's during the typical overnight period, during more extended periods of food scarcity, or for religious reasons.

What *is* new is that clinical research on IF's benefits for health and longevity is beginning to catch up.

Data show that IF, when done properly, might help extend life, regulate blood glucose, control blood lipids, manage body weight, gain (or maintain) lean mass, and more.

Rather than something we're forced to endure – a result of poor food availability or cultural expectations – IF is becoming something that health and physique-oriented people are seeking out in order to keep their bodies in top shape.

The proposed benefits of IF in animals and humans read like a laundry list of “look better,” “feel better,” “live longer” physiological changes. These include:

REDUCED

- blood lipids (including decreased triglycerides and LDL cholesterol)
- blood pressure (perhaps through changes in sympathetic/parasympathetic activity)
- markers of inflammation (including CRP, IL-6, TNF, BDNF, and more)
- oxidative stress (using markers of protein, lipid, and DNA damage)
- risk of cancer (through a host of proposed mechanisms; we'll save them for another review)

INCREASED

- cellular turnover and repair (called autophagocytosis)
- fat burning (increase in fatty acid oxidation later in the fast)
- growth hormone release later in the fast (hormonally mediated)
- metabolic rate later in the fast (stimulated by epinephrine and norepinephrine release)

IMPROVED

- appetite control (perhaps through changes in PPY and ghrelin)
- blood sugar control (by lowering blood glucose and increasing insulin sensitivity)
- cardiovascular function (by offering protection against ischemic injury to the heart)
- effectiveness of chemotherapy (by allowing for higher doses more frequently)
- neurogenesis and neuronal plasticity (by offering protection against neurotoxins)

With this list of benefits, IF appears to be an amazing cure-all. So why isn't everyone doing it?

Well, as I've said, everyone is doing it! In most cases, people are fasting for 12 hours every single day. Unless you're waking up at night and raiding the fridge, you're probably already enjoying some of the benefits of IF. You just didn't know it.

However, current research is showing that some of these benefits may only be realized after longer periods of fasting – around 20-24 hours, depending on your activity levels. For example, if you're fairly sedentary during the fast, you may need the full 20-24 hours without food to realize the benefits. However, if you're very active, or you exercise purposefully during the fasted state, you may be able to enjoy the same benefits after only 16-20 hours without food.

This brings up an important point: I strongly recommend you follow an exercise program regardless of whether you're experimenting with IF. Although exercise and IF share some of the same benefits, many researchers believe their combined impact on energy balance and cellular adaptation enhances the benefits of both interventions. However, in the absence of clear research data, this could just be wishful thinking.

Not so fast! (Sorry.)

Research in favour of IF looks compelling. So, shouldn't you get started right away? Maybe, maybe not. Sometimes looks can be deceiving.

Before we get all gung-ho and skip meals or entire days of eating, I think it's important to mention a few things you're not going to read on most pro-IF web sites.

1 PROBLEM | MOST OF THE RESEARCH TO DATE HAS BEEN DONE USING ANIMAL MODELS.

Although animals (like rats and monkeys) are convenient test subjects, they're not perfect models for predicting human response patterns. So, all the animal data suggesting strong benefits with IF aren't necessarily helpful in predicting what will happen when humans try it.

When we look to the human data, we find – disappointingly – that experiments using IF are very limited. Also, those experiments that have been done often use poor experimental control groups. This makes their descriptive and predictive power limited.

(There are some excellent reviews on this and I'll point to them in the resources section in case you're interested.)

I know this is annoying. I wish science were done perfectly every time, too. But right now, based on the available research, we're left with far more questions about IF than answers. Nothing is definitive.

As a side note, none of this is surprising. Human subjects are notoriously hard to recruit for research projects, unless they're well-paid, especially for projects that seem inconvenient or uncomfortable.

NOTE FROM KRISTA: HOW RAMADAN GOT ME INTERESTED IN INTERMITTENT FASTING

I first became interested in IF many years ago, when a client contacted me to ask about Ramadan and muscle loss. During the holy month of Ramadan, for about 30 days, observant Muslims fast every day from sunrise to sunset. The fast-breaking evening meal is often a big dinner. Seems like the perfect scenario for muscle loss and fat gain, right?

Well, I'm glad I checked the clinical research before smugly assuming that Ramadan fasters' muscles were dissolving and their bellies expanding. Turns out, even though many folks were chowing down on large meals every evening, they were sometimes healthier during Ramadan than the rest of the year. In particular, heart disease and markers of inflammation decreased.

Given the concerns over how well animal research applies to humans, observant Muslims make up a useful human study group for intermittent fasting. They're

highly motivated to be compliant, there are lots of them, and researchers can follow them for a month every year. Plus, more traditionally observant Muslims (also Mormons, another common fasting study population) typically avoid foods – such as alcohol and junk food – that might skew a study's results.

About this time, new research also suggested that eating less (aka caloric restriction, or CR) could also improve longevity. But daily CR – for the rest of one's life – seemed horrible. CR advocates looked like walking

skeletons, and the chronic daily restriction slowed their metabolism (including hormone production) to a crawl. Sure, they'd live forever, but in that state, who'd want to?

Thus, fasting periodically seemed like a good way to combine the longevity benefits of CR with the lowered inflammation and other health benefits of fasting, while still maintaining hormonal health and lean mass.

This research got my attention. And like JB, I decided to experiment.

With IF, you've got a double-whammy. First, IF studies don't sound all that attractive. ("Come to our lab so we can starve you for a day.") Second, there aren't many big-dollar companies lining up to fund studies that support *not* eating.

PROBLEM 2 | IF IS OFTEN COMPARED WITH "NORMAL" EATING.

Whether that's standard rat-chow (in the case of our furry little friends) or the North American diet (for our slightly larger friends), neither diet is best for health, body composition, or performance. In comparing study participants using IF strategies to those using suboptimal dietary intakes without fasting, we are actually "stacking the deck" in favour of IF.

How so? To start, the standard North American diet is often *hyper-energetic* – we eat more than we burn – which leads to weight gain over time. Since IF protocols often lead to a negative energy balance – burning more than we eat – the comparison isn't exactly fasting vs. non-fasting. It's more like a comparison between under-eating and over-eating. And that limits what such studies can actually tell us about intermittent fasting.

You see, almost all controlled calorie studies – not just the IF ones – show improvements in a wide spectrum of health and body composition markers, especially when body weight and body fat are lost in the process.

So maybe it's not the IF protocol that's leading to all the benefits described above. Maybe it's just burning more than we eat that makes all the difference.

Inconclusive... but interesting

Beyond calorie control, the typical North American diet is full of highly processed macronutrients, chemical additives, and environmental pollutants. By asking subjects in the IF studies to abstain from food for extended periods, perhaps we're not only tricking them into eating fewer calories, we're also limiting their intake of health-degrading chemicals.

Of course, you might argue, that's one of the main points of fasting. However, IF isn't required to reduce our intake of processed food, additives, and pollutants. Maybe we could just stop eating processed foods, additives, and pollutants and experience the same benefits.

Beyond this speculation, there are many other reasons why the IF-related research is inconclusive. But I don't want to bog this book down with too much exercise and nutritional science.

In the end, I'm not trying to argue for or against the benefits of IF. I actually think IF can be a cool approach to solving a few health- and body composition-related problems. However, as a trained scientist, I *am* trying to keep it real. While IF research does look promising, this area hasn't yet evolved to the point where we can say with certainty that the benefits come exclusively from fasting.

Right now, it's equally plausible that: a) eating fewer calories than you burn; and b) eating a diet lower in processed foods, chemicals, and pollutants may offer most of the same benefits as IF. Add in a good exercise program and you might be able to match benefit for benefit.

I will say this: I'm paying attention. As the IF research program continues, I'll be watching closely to see what happens when calorie-controlled, nutrient-dense, healthy IF diets are compared to calorie-controlled, nutrient-dense, healthy diets that don't use extended fasts. Only when these studies are done will we really know whether the magic is in the IF – or in improving food amount and food selection.

IS IT THE FASTING OR IS IT THE NEGATIVE ENERGY BALANCE?

My good friend Alwyn Cosgrove – a well-known training expert and gym owner – illustrates how hard it is to draw conclusions:

“99% of the beginner fat loss clients at my gym come to us constantly skipping breakfast. They don't eat between 8 PM and noon or 1 PM every day. So they end up fasting between 16 and 18 hours most days, just like a lot of the fasting advocates recommend. Sure, their diets aren't very good to start with. But they're fasting and not getting leaner. In fact, many of them are gaining fat.

“When we add in a healthy breakfast within 15 minutes of waking up, we see big differences right away. I don't know if eating breakfast helps them control hunger, leading to fewer total calories eaten later in the day. I'm not completely sure. Maybe there are other metabolic or nutritional differences that help here too. All I know is that stopping the fast first thing in the morning

kicks off a host of positive changes for these clients. It works every time. In the real world.”

Of course, in Alwyn's example, a few things change simultaneously. His clients start exercising regularly, which makes a big difference. They also start eating an extra meal each day (breakfast). Those are the direct changes.

Indirectly, I'd guess that adding breakfast affected their meals later in the day, causing them to eat less with each one. Because of the breakfast, they just weren't as hungry at lunch or dinner.

I also bet their new commitment to fitness not only led them to join the gym and start eating breakfast, but to also change the types of food they ate, even if they weren't told explicitly to do so.

That's why I suspect Alwyn's clients benefit from not fasting. The sum total of their two main changes (adding exercise and adding a healthy breakfast) and their two secondary changes (improving food type and amount later in the day) led to the most

important requirement for weight loss: a negative energy balance.

Simply put, their energy burn began to exceed calories eaten. They lost weight, got healthier, and improved their lives by not fasting.

But this isn't an argument for or against breakfast (or fasting). I suspect that if all else is equal – a decent amount of exercise, controlled total calorie intake, appropriate food selection, and proper meal timing – it doesn't matter all that much whether clients eat breakfast (a shorter fast) or skip breakfast (a longer fast).

There's only one problem: it's really hard to make sure all else is equal.

Exercise and eating decisions don't operate in a vacuum. One decision influences the next, and so on. This happens on both the conscious and unconscious level. And there's an interesting cross-talk between the body (physiology) and the brain (psychology).

Thus, people skipping breakfast without a plan usually overeat later in the day. In fact, evening

over-eating is one of the biggest problems for our fat loss clients too. This results in more body fat, a higher risk of diabetes, and a host of other health problems. That's why many coaches recommend that people new to eating well and exercising should start eating breakfast.

In other words: It's not the breakfast, but what happens after the breakfast that's important.

However, it seems like those who have a good plan for controlling calories later in the day and stick with it can get away with skipping breakfast without any negative consequences.

So really, breakfast only matters when it's factored into your eating decisions for the entire day.

That's why self-experimentation and lifestyle matching are really important. If you want to maximize your results, you'll have to figure out how you respond to eating breakfast or skipping it. Things like your schedule, your unique physiology, and your own self-discipline will play a big role here. But more on all that later..

[In fact, at Precision Nutrition we're now putting together just such a pilot study with our own clients.]

That research could take a long time, though. Here's my advice: *Don't wait until these studies are done to start living better.* Control your food intake and quality *right now*, start an exercise program *right now*, and you'll get many, if not all, of the benefits above.

Of course, that's easier said than done. Fitness professionals have been telling people to "eat less and exercise more" for years now. And that hasn't been working so well.

That's why I prefer to actually give people strategies and best practices for improving their eating and exercise. To learn more about them, you can check out the Resources chapter at the end of this book. I'll link you to a free 5-day course that will help you build a strong foundation for improved body composition and health.

You should only try more advanced protocols like IF *after* you've built this strong foundation. A one-time, one-day fast, as proposed in the introduction? That's cool. Leaping – as I did – into more elaborate plans? Save that sort of self-experimentation for later.

As they say in grade-school grammar: you have to learn the rules before you can break them. A guy like me – who's been exercising and eating well for nearly 20 years – has mastered the essentials.

Now it's time to break some rules.

CHAPTER 2

Why Do Intermittent Fasting?

I've been following sound exercise and nutrition practices for nearly 20 years. That's not just hot air either. I'm an evidence-based guy, and so of course, I have all the evidence to prove it.

Prior to my fasting experiments, I did a bunch of tests. Here are the results:

	BLOOD MARKER	VALUE	REFERENCE RANGE
Age: 37 years	Glucose	5.0 mmol/L	3.6 – 6.0
Height: 5'9"	Creatinine	103 umol/L	62-115
Weight: 190 pounds	eGFR	72 mL/min/1.73 m ²	60-89
Body Fat: 10%	AST	34 U/L	7-37
Bench Press: 350 pounds for 1 repetition	Cholesterol	3.78 mmol/L	<5.0
Deadlift: 450 pounds for 1 repetition	LDL	2.24 mmol/L	<3.36
40-yard sprint: 4.9 seconds	HDL	1.15 mmol/L	>1.04
Vertical jump: 32 inches	Cholesterol/HDL	3.3	<4
	Triglycerides	0.86 mmol/L	<1.69
	Hemoglobin	154 g/L	135-175
	WBC	4.3 xE9/L	4-11
	RBC	4.95 xE12/L	4.5-6.0
	MCV	87.1 fL	80-100
	MCH	31.1 pg	27.5-33.0
	MCHC	357 g/L	305-360
	RDW	12.2 %	11.5-14.5
	NEUTS	1.3 x E9/L	2.0-7.5
	LYMPH	2.2 x E9/L	1.0-3.5
	MONO	0.6 x E9/L	0.2-1.0
	EOS	0.2 x E9/L	0-0.5
	BASO	0 x E9/L	0-0.2
	Platelet Count	169 x E9/L	150-400
	GGT	10 U/L	15-73
	Thyrotropin	1.62 mIU/L	0.35-5
	Testosterone	28.9 nmol/L	8.4 – 28.7

As you can see, for a guy nearing 40, I started this experiment lean, strong, fit, and muscular, and with a good blood profile that any doc would be satisfied with (notice all the values are within the reference ranges). I'm very happy with that. And for the record, I didn't "train" for the pre-testing. This is just me. I've been able to maintain this kind of health and fitness profile, plus or minus 10 pounds of bodyweight, for nearly 20 years.

So why change anything?

I was curious. After my first one-day fasting experiment, some colleagues asked if I'd ever done any extended fasting experiments. I hadn't. But I had become very interested in the work of strong IF proponents like Ori Hefenkler, Brad Pilon, and Martin Berkhan.

Reading the anecdotes from their website followers, I became intrigued with the idea that you could skip meals – and sometimes entire days of eating – without suffering lethargy, brain fog, and muscle loss. Even more intriguing was the idea that you could accelerate body fat loss and get healthier with strategic, well-timed fasts.

These claims run counter to today's popular nutritional recommendations, which assert that small, frequent eating – grazing, if you will – is the best way to control appetite, blood sugar, and body weight.

As someone who's averaged 4 to 7 meals per day for nearly 20 years, I was skeptical at first.

After all, the grazing concept has not only served *me* well, it's helped over 100,000 of my own clients and readers (and millions of people worldwide) get into better shape. Especially in light of the infancy of the IF research, ignoring all the evidence and experience I have with grazing and higher meal frequency diets – or throwing it out the window based on the theories and anecdotes of a few individuals – would be an absurd overreaction.

Instead, I wanted to test it out myself. Precision Nutrition is itself a sort of private nutrition research firm: in search of the fastest and easiest way to lifelong fitness, we'll give any and all reasonable nutrition protocols a try.

Testing IF is a natural fit; we're always experimenting, and we're lucky enough to have a very large client base and data set to work with. I wanted some personal experience with IF before setting up a pilot study with a small group of clients. The only way to truly understand a nutritional system is to try it; in the fields of health and nutrition, the published research is *always* limited. (More on this later.)

So, my first reason for trying IF was a mixture of scientific and personal curiosity.

The other, more compelling reason? I had a new goal.

With the big 4-0 approaching, one of my "old man" goals is to compete in track and field at the master's level – in particular, 100 m and 200 m sprint races. (I was a sprinter "back in the day" and thought it'd be fun to get started again.)

However, I know my body well. At 190 pounds, I was too heavy and slow. So, I decided to drop my body weight to a more track-friendly 170-175 pounds, which seems to be my sweet spot. To accomplish this, I set out the following goals:

LOSE 20 POUNDS.

At 190 lb, I was just too big for my new goal of track and field competition. In sprinting, every pound counts. Although I was already lean, I needed to lose between 15-20 pounds to support my training.

LOSE BODY FAT.

Of course, I didn't want to lose much muscle. Since I started this adventure weighing a lean 190 pounds, I knew that would be tough. I'd need to proceed cautiously in order to achieve a fit, healthy, high-energy, and absolutely ripped 170-175 pounds.

STAY LEAN.

In the past, I've been able to get extremely lean through more conventional dieting strategies. But only for so long. A bad mood and even worse food cravings would drive me to eat ravenously once the diet ended. This rebound eating brought me right back up to 190 pounds in short order. This time, I wanted to lose those last few pounds of fat and stay super lean... indefinitely.

FEEL GOOD.

My past diets made me cranky, miserable, and low in energy. Even though I looked great, I was mean. Plus, I didn't think very well. (Again, all of this can be explained scientifically.) To keep Mrs. Berardi and my friends from punching me in the face, and to keep Dr. Berardi from turning into Mr. Hyde, my diets would normally have an "end date." I didn't want an "end date" anymore. I wanted to find a way to eat that would help me maintain my new body weight and conditioning while feeling great... forever.

STAY HEALTHY.

I get my blood work done annually and all my values are in the healthy range, including my hormones. I wanted them to stay that way throughout the weight loss process. While properly losing weight helps with things like blood glucose and cholesterol, various hormones can get out of whack, negatively affecting health. So I wanted to make sure that all my blood values were in a healthy range even while dropping fat.

Although these are all reasonable goals individually, together they're a pretty tall order for a guy who's maintained his weight around 190 pounds for two decades. Although I could do it with a new training plan and a more conventional fat-loss type diet such as my very popular, and effective, "Get Shredded Diet" (see Resources), I wanted to put IF to the test. Could IF live up to the hype under these tough conditions?

Honestly, almost *any* basic exercise and eating plan can help a beginner and/or significantly over-fat person drop some weight. But it takes a pretty exceptional plan to help someone who's *already* lean and muscular get down into the lowest range of body fat – *without* wrecking their performance or causing a massive rebound in body weight.

I was up for the challenge.

CHAPTER 3

Intermittent Fasting Review: Comparing the Popular IF Programs

IF sounds very promising as a general ideology. But things get messy when it comes to actually *doing* IF.

How often should you fast? For how long? Should you eat zero calories? Should you eat the same amount of food on non-fasting days that you normally would, or should you eat more?

These are all questions that have no answers yet, so many IF proponents have come up with their own best guesses. Here's a quick review.

ALTERNATE DAY FASTING (ADF)

(36 hour fast / 12 hour feed)

With this plan you simply eat every other day. So on Monday, you'd eat within a 12-hour window, say, 8 AM to 8 PM. Then you'd fast overnight on Monday, and all day/overnight on Tuesday. You'd eat again from 8 AM to 8 PM on Wednesday. And so on. Alternate day fasters are encouraged to make good eating choices, but they're allowed to eat what they want on the non-fasting days.

MEAL-SKIPPING

(Random)

Some IF proponents believe we should behave like our evolutionary ancestors did. As humans evolved to get their food and exercise randomly, so should we. This brand of IF includes eating unprocessed "evolutionary friendly" food (think Paleo-diet type), randomly cycling daily calorie intake, and randomly skipping a breakfast or dinner meal once or twice a week. The rules are very flexible. (It is random, after all.)

EAT STOP EAT

(24 hour fast, 1 or 2 times per week)

On this plan, you fast for a full 24 hours once or twice per week, eating sensibly (higher protein, minimizing processed foods, etc.) the rest of the week. It's flexible: You can choose whichever 24 hours you want. Want to fast from breakfast to breakfast? That's cool. Just eat breakfast on Monday, and don't eat again until breakfast on Tuesday. Want to fast dinner to dinner? That's cool too. Eat dinner on Wednesday, and don't eat again until dinner on Thursday.

LEANGAINS

(16h fast / 8h feed)

This brand of fasting is based on an 8-hour feeding period followed by a 16-hour fast. However, it also layers a few other food rules on top. The diet should be high in protein, should cycle carbohydrates, should include fasted training, and should use nutrient timing (eating the bulk of your calories during the post-exercise period). On this plan, you fast from, say, 9 PM on Monday night until 1 PM on Tuesday afternoon. If you're going to exercise, you'd do so just before 1 PM on Tuesday, with 10 g BCAAs (branched chain amino acids) during training. After training, you eat 2-3 meals before 9 PM, with your biggest meal coming right after exercise. The fast begins again on Tuesday evening until Wednesday at 1 PM, and repeats every day.

WARRIOR DIET

(20 hour fast / 4 hour feed)

On this plan, you would either fast, or eat very small amounts of specifically recommended foods, for the first 18-20 hours of each day, working out during this period of under eating. Then, you would eat the majority of your daily intake within a 4-6 hour over feeding window. After that 4-6 hour over feeding period, you would repeat the under eating/fasting for the next 18-20 hours. Generally, most people place their over feeding window at the end of the day, as it's more convenient for family dinners and after-work training sessions. However, modifications can be made based on individual and scheduling differences.

As you think about these different IF variations, don't focus too much on the *differences* between them. Instead, take a second and ask yourself what's *similar* about each program. You'll find they're all variations on a single theme.

Theme and variations

1 | THEME | SHRINK THE "EATING WINDOW"; EXPAND THE "FASTING WINDOW"

With most IF protocols, you simply draw out your normal overnight fast for a specified period of time – whether it's 16, 24, or 36 hours. Likewise, you narrow your normal feeding window to 4, 8, or 12 hours.

2 THEME

BALANCE ADVANTAGES AND DISADVANTAGES

As mentioned earlier, some IF proponents believe that the longer the fast – up to but not over 36 hours – the greater the health and disease-prevention benefits.

However, longer fasts are a double-edged sword. Gaining – and preserving – lean mass is a critical part of healthy living and healthy aging, not to mention looking good and being fit. Unfortunately, longer fasts may harm muscle health and performance. They may also negatively affect nutrient intake: When you eat less of everything, you also eat fewer vitamins, minerals, and beneficial phytochemicals.

That's why more physique- and fitness-conscious individuals tend to prefer shorter fasts (in the range of 15-20 hours per day) that end in a workout, followed by an eating period of 4-9 hours. Although it's mostly speculation, there are two proposed benefits:

1. The fasted workout can stimulate a physiological state similar to an extended fast.
2. Eating most of your energy and nutrients in the post-exercise window can help with muscle recovery and nutrient partitioning.

3 THEME

KEEP IT REAL

Of course, there's always the compliance challenge. Even if science were to show that one specific fasting plan is best, if you can't actually *do* that protocol, you've got a problem. I suspect that's another reason IF proponents suggest shorter fasts.

Doing a 24-36 hour fast once per week isn't that big of a deal. Doing a 36-hour fast *every other day*? Well, that kinda sucks. Especially if you exercise regularly, which makes you hungrier and increases your calorie and nutrient needs.

Why Self-Experiment?

Because the research is so spotty, no one really knows which type of fasting is best for different goals – whether that's fat loss, muscle preservation, disease prevention, or longevity. And because no one really knows whether IF offers any additional physiological benefits at all, everyone is just guessing. That's not a problem as long as there's *sane* self-experimentation involved.

As the various IF communities and early adopters test out their different ideas, the best ones will rise to the top. Eventually, scientists will catch wind of these and put them to the test. Right now, I'd say we're a good 5-7 years from knowing what exactly IF does in humans (and why), and a good 10-12 years from knowing which IF protocols are “best.”

But don't use this delay as an excuse for not making changes in your life. As the old proverb says, the man who deliberates fully before taking a step will spend his entire life on one leg.

Forget what science hasn't yet proven. Establish best practices in your own exercise and nutrition habits, right now. Then once you have that experience to rely upon, you can tweak away to your heart's content.

Let's get started with the experiments.

ON EXERCISE AND HUNGER

If you exercise regularly, you need more calories and nutrients than someone who doesn't. Your body will ask for those nutrients by making you hungrier. IF protocols designed for non-exercisers will probably make you feel awful.

Of course, non-exercisers, beware of the same thing. Better yet, start exercising!

We'll talk more about fasting and exercise in Chapter 5 and 6.

CHAPTER 4

The Weekly Fast: My First Intermittent Fasting Experiment

Fasting was new to me, so I chose to start simple. By intentionally biting off less than you can chew, you can achieve more than you thought possible.

I know it's gratifying to think: "I'm gonna do my research, learn everything I can, adopt the perfect plan, and then I'll *crush* this." But that's just your ego talking. And its eyes are much bigger than its stomach.

Under these conditions, people rarely ever crush it. Instead, here's how it usually plays out:

You waste a lot of time reading books and "researching" on the internet. You're looking for the perfect program and after precious days, weeks, months of inaction, you finally find it. Hurray!

You create a massive, all-encompassing, awe-inspiring action plan and begin to implement it. Out of the gate, you're a total champ. You're 100% disciplined and committed. Nothing can stand in your way. Cue the Rocky training montage.

After a few weeks, maybe a month, you notice tension developing. At work, at home, in your relationships – something's happening. You're having trouble sticking to the program you created. You lower your head and tell yourself, "It's just for a little longer."

By now, you're either panicking or have succumbed to apathy. Your self-talk is on the decline. "I guess I'm not cut out for this. Maybe other people can do it, but they must not have a life. Me, I've got a job, a family, responsibilities. This is impossible."

You can't figure out what's going wrong. Eventually, something's got to give. The quest ends prematurely. (Or, in some radical cases, it doesn't end, and you end up jobless and homeless, living in an old VW bus in Santa Monica, California.)

The sad truth is that it never had to happen this way. If you had taken the smallest, simplest action step available to you – even if it wasn't the "perfect" one – you could have built some positive momentum. You could have built this new change into your life.

As your capacity grew, you could have added new, equally simple action steps. You could have built things up, one upon the other, slowly, steadily, all the way to the

ONE "SLOW AND STEADY" OPPONENT COMES AROUND

One of our biggest success stories is a high-profile lawyer who started out very critical of our "slow and steady" approach. He wanted more, he wanted it quickly, and he wanted it now. He even wrote us a "strongly worded letter" early in the program, asking for his money back.

We convinced him to stay and, fortunately, he stuck with the program. Over the next 12 months he lost nearly 90 pounds of body fat, reversed his type-2 diabetes, and got into the best shape of his life. (Note: he didn't use IF, just a series of exercise and nutrition best practices.)

The guy even won \$10,000 of my own money as part of the Lean Eating body transformation challenge we run every year.

The moral: Do less, and you could end up with more.

achievement of your goal – a goal you can now sustain because you’ve *grown yourself* along with the change.

Trust me, I know all about this. Every year my coaching program gets 3,000 fresh new recruits, all of them thinking they’re going to come in and – yep – *crush* this. Yet *only* the ones who allow us to hold them back, to do change as it’s meant to be done – slowly and steadily – *actually* crush the program.

Experiment 1: The Weekly Fast

In the spirit of simplicity, I made my first fasting experiment as manageable as possible. I decided to fast one day per week, every Sunday.

Of course, I normally eat well – high protein and veggie intake, mixed nuts, fish oils, properly prepared legumes, a fairly low starch and sugar intake, and 2 litres of water per day. Plus I exercise 4-6 times per week. I decided to keep all that the same.

I just ate a little less food on my non-fast days (I dropped roughly 500 calories per day from normal intake), added an “eat whatever I want” day, and added a fast day.

Here’s what my schedule looked like:

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Exercise	Upper body strength exercise – 45 minutes	Treadmill sprints – 10 minutes	Upper body circuit exercise – 30 minutes	Treadmill sprints – 10 minutes	Lower body strength exercise – 45 minutes	100 push-ups before each meal	No exercise
Nutrition	Moderate calorie intake (2500 kcal)	Moderate calorie intake (2500 kcal)	Moderate calorie intake (2500 kcal)	Moderate calorie intake (2500 kcal)	Moderate calorie intake (2500 kcal)	Eat whatever I want, stopping at 10 PM (5000 kcal)	Fast until Monday morning (0 kcal)

How I trained during the Weekly Fast

Here's what my workout program looked like:

DAY 1 – MONDAY

(Upper body strength: 45 minutes)

Upper body warm-up

- A1. Flat dumbbell bench press 5 sets × 3 repetitions
- A2. Pull-ups 5 sets × 10 reps
- B1. Bent-over rows 5 sets × 3 reps
- B2. Low cable crossover 5 sets × 10 reps
- C1. Explosive bench press 5 sets × 8-10 reps
- C2. Explosive inverted rows 5 sets × 8-10 reps

Note: "A1" and "A2" mean that I alternated those sets. I did one set of A1, then one set of A2, then back to A1, for a total of 5 "rounds". Same for B1/B2 and C1/C2.

DAY 2 – TUESDAY

(Treadmill sprints – 10 minutes)

- Walk 2 minutes
- Sprint 15 seconds at 9 mph and 12% incline
- Rest 15 seconds
- Repeat 10 times
- Walk 2 minutes

DAY 3 – WEDNESDAY

(Upper body circuit – 20 minutes)

Upper body warm-up

- A1. Close-grip push-ups x 20 reps
- A2. Inverted rows x 20
- A3. Flat DB press x 10
- A4. Bent-over DB rows x 10
- A5. Band crunches x 10
- A6. Reverse hypers x 10

Go through exercises in order specified, with no rest in between exercises. Rest 1 minute after finishing A6. Repeat 5 times.

DAY 4 – THURSDAY

(Treadmill sprints – 10 minutes)

- Walk 2 minutes
- Sprint 15 seconds at 9 mph and 12% incline
- Rest 15 seconds
- Repeat 10 times
- Walk 2 minutes

DAY 5 – FRIDAY

(Lower body strength – 45 minutes)

Lower body warm-up

- A1. Front squat 5 sets × 3 reps
- A2. Swiss ball leg curls 5 sets × 10 reps
- B1. Deadlifts 5 sets × 3 reps
- B2. Dumbbell squats 5 sets × 10 reps
- C1. Kettlebell swings 5 sets × 8-10 reps
- C2. Speed deadlifts 5 × 8-10 reps

Note: you might be wondering about the Saturday push-ups. Nothing magical there. My chest is my weakest body part in terms of muscular development, which is why I added an extra 400-500 push-ups on one non-exercise day.

What I ate during the Weekly Fast

I didn't follow a diet per se. I just followed these rules:

MONDAY THROUGH FRIDAY

Meal frequency: Eat 4 meals per day, with about 4-5 hours between meals.

Meal content: Most meals should contain:

- 2 palms (8 oz) of lean protein
- 3 fists (3 cups) of veggies
- 1/2 handful (1/4 cup) of raw nuts
- 1/2 handful (1/4 cup) of legumes
- 500 mL (2 cups) of water

Supplements: Each day I took:

- 1 multi-vitamin
- 4000 IU vitamin D
- 15 mL (1 tablespoon) fish oil
- 10 g BCAA capsules before workouts

SATURDAY

Eat whatever I want, with the following rules:

- break most of the rules above
- eat until satisfied, not until sick
- focus more on increasing carbohydrates instead of fats
- do 100 push-ups before each meal
- stop eating at 10 PM

SUNDAY

Fast from 10 PM on Saturday till Monday morning. Eat 3 “meals” on Sunday, with each meal being:

- 1 L (4 cups) water with 1 scoop greens drink
- 250 mL (1 cup) green tea
- 5 g BCAA capsules

SAMPLE MEALS – MONDAY TO FRIDAY

Here are some sample Monday-to-Friday meals:

Sample 1

- 8 oz chicken thighs (marinated in olive oil and hot sauce)
- 3 cups of cole slaw, broccoli slaw, and carrot slaw salad
- 1/4 cup of lupini beans mixed in salad
- 2 tbsp raw mixed nuts in salad
- Salt, pepper, seasoning
- 2 tbsp white vinegar as dressing
- 2 tsp Udo's oil as dressing

Sample 2

- 5 whole eggs
- 2 slices bacon
- 4 tbsp homemade pesto (with basil, spinach, raw cashews, olive oil)
- 1/4 cup of refried beans
- 1/2 red bell pepper
- 2 tsp fish oil

Sample 3

- 2 scoops unsweetened whey protein powder
- 1 cup unsweetened almond milk
- 1 scoop chocolate raspberry flavoured greens+ supplement
- 2 tsp fish oil

Sample 4

- 8 oz extra lean ground beef
- 2 cups of spinach, tomato, green pepper, and onion salad
- 1/4 cup of kidney beans mixed in salad
- 1/2 cup home-made guacamole in salad
- Salt, pepper, seasonings
- 2 tsp Udo's oil as dressing
- Zone bar (chocolate mint flavour)

Sample 5

- 3 spicy turkey sausage links
- 2 cups of frozen vegetable medley
- 1 cup sauerkraut
- Salt, pepper, spices
- 2 tsp fish oil

Of course, during these 8 weeks, I used a lot of different meal combinations. But the central theme was to include about 8 oz of protein (2 palms worth), a ton of veggies, some nuts, some legumes, and some healthy oils. Once in a while I threw in a protein bar or protein shake, but these were the exception rather than the rule. When I ate out at restaurants, I made it as simple as possible: large portion of protein, lots of veggies, hold the starches, and include some oil and vinegar dressing. Easy, easy, easy.

SAMPLE MEALS – “EAT WHAT I WANT DAY”

On my “eat whatever I want” day, I did exactly that. Here are some examples from those days.

Sample 1

- 2 small chorizo soft tacos
- 2 small beef soft tacos
- 2 small fish soft tacos
- 2 small chicken soft tacos
- 1/4 cup guacamole
- 1 Corona beer

Sample 2

- 3 whole eggs
- 2 pieces bacon
- 1 green pepper
- 1/2 cup oatmeal with chocolate protein
- 2 tbsp peanut butter
- 2 tbsp chocolate chips

Sample 3

- 2 chicken breasts in a large salad
- 1/2 pint of Ben and Jerry’s ice cream
- 2 chocolate chip cookies

Sample 4

- 15 pieces of sushi
- 1 cup seaweed salad
- 1/2 cup green tea ice cream

CALORIE INTAKE

Generally, I ate about:

- 2500 calories on my moderate intake days
- 4000-6000 calories on Saturday
- 0 calories on Sunday

This made my daily average intake about 2500 calories for the entire week.

FOR OBSESSIVE-COMPULSIVE TYPES

Obsessive-compulsive people: I could go on and on about why you shouldn't focus all your attention on calorie counting and achieving the perfect calorie balance. But that's another topic for another day. Instead, I'll simply say this: Although I did write down what I ate each day in a little notebook, I didn't actually try to predict

my exercise expenditure or balance it out with my energy intake using one of those online calorie counter thingies. In fact, I almost never do any of that anyway. (Nor, probably, should you. Ever.)

Instead, I followed the "fist" and "palm" rules: a cup of veggies is about the size of my fist; 4 oz of protein is a cut of meat, poultry, or fish about the size of my palm. These rules get me in the right

calorie zone without the stress and inconvenience of weighing and measuring every meal. Close enough and hassle free.

I also listened to appetite and hunger cues, which is something every health- and fitness-conscious person should learn how to do.

2500 calories per day is the number I'd typically used to lose weight and body fat in the past, so

it was a good point of comparison. If this plan was more effective than previous attempts, or easier, I'd know I was on to something.

Of course, you will need to use a different calorie estimate that reflects your own body size, metabolic rate, and activity levels. In other words, our fists and palms probably aren't the same size. But I'm sure you already figured that out.

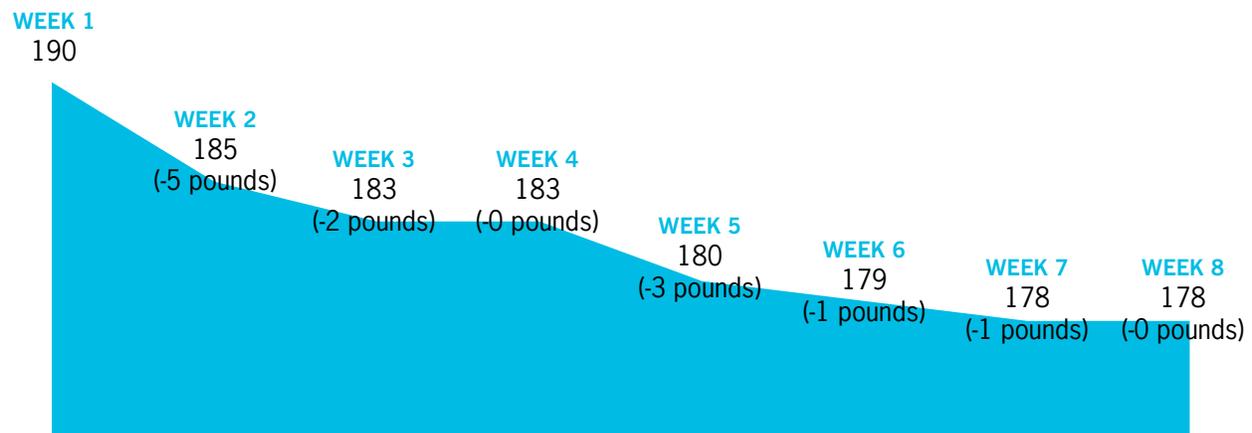
So what happened to me?

The Weekly Fast: The Results

WEIGHT LOSS

I lost 12 pounds of body weight during the first 8 weeks on this plan. I started at a weight of 190 pounds and ended up weighing 178 pounds.

Of course, this weight loss wasn't linear. It looked more like this:



As you can see, there was some immediate weight loss, probably from the initial body water losses common with a lower carbohydrate diet. After that, I saw a steadier loss of 1-2 pounds per week.

Note that my weight – and anyone’s weight, for that matter – fluctuates throughout any given week. This is normal, and exaggerated further when cycling calories. After my high calorie days, my weight was up 1-2 pounds. After my fasting days, it was down 1-2 pounds. That’s why it’s important to only compare the results of your *reference day weigh-in* each week, even if you’re weighing yourself every day, like I did.

My reference day was Friday morning.

This was the furthest day from my last high calorie and fasting day, the day that my weight was most likely to be stable. Expect weight ups and downs. Don’t fret over them. If your energy intake is right, the weight gain is not body fat. It’s water weight. Just trust your reference day weight and if it’s progressively going down over time, all is well.

BODY FAT

According to my Intelimetrix body fat device, 60% of the losses (7.2 pounds) I experienced during the first 8 weeks were fat pounds. The rest (4.8 pounds) was “lean mass.”

I wasn’t too worried about that. Lean mass is made up of all non-fat weight in the body, most of which is water. Because I was eating enough protein and my strength stayed stable during the phase, I expect that most of the lean mass I lost was actually water weight.

MOOD AND ENERGY

In describing mood and energy, I think it’s important to separate *general* feelings of mood and energy vs *specific* feelings on the day of the fast. It’s also important to note that these feelings will change from week to week.

When I began this experiment, the first few fasting days were a challenge.

Early in the day, as hunger signals accumulated, I found myself constantly thinking about food. That’s when I learned it’s important to stay busy with different errands and tasks. If I was idle, my inner adolescent acted up: “Waahh, I’m hungry! This sucks!” When I kept busy, I thought much less about eating, and didn’t feel compelled to eat.

As the day progressed, my physical hunger actually diminished, although it came back in waves. However, I felt my energy progressively decrease, too; I didn’t want to move around much, so I didn’t. After about 4 PM on each fasting day, I just took it easy, spending time with my family around the house or in the yard. And definitely no workouts on the fasting days.

I did feel a little short-fused and moody during the first few fasting days. This is a normal consequence of the hormones released during fasting. It’s to be expected, although it was still frustrating for my family and I. I needed to be extra vigilant about keeping myself calm, taking deep breaths before responding to a challenging comment, and not overreacting to small things.

While I’m sure none of this sounds all that appealing, I think it’s important to note that none of these feelings were as bad as I expected they’d be. Rather than making me totally miserable, they just slightly annoyed me. As long as I kept busy and was mindful of my interactions with friends and family, things were okay.

Here's another hopeful message: As you practice this type of fasting, it gets much, much easier. My first one-day fast was rough. With each subsequent one-day fast, it got better. By my 4th or 5th fast, I was barely uncomfortable at all. And by my 7th or 8th fast, I was having great days.

This leads nicely into a discussion of my *general* feelings of mood and energy. While my body weight and fat changes were on par with previous fat loss experiments, I noticed a big difference in how I felt on the days I wasn't fasting.

During previous diets, within four weeks my energy would go down, my training would suffer, and a brain fog would set in, all of which would kill my memory and concentration. I often described this feeling as "the life being drained outta me." It wasn't a huge problem, but it was annoying. I couldn't wait to "get back to normal."

On the other hand, with this fasting plan, I didn't really experience the same complaints. In fact, I never really felt like I was "dieting" – except for the one fasting day per week (see description above). Most of the time, I felt minimal brain fog, very few intense food cravings, and not much discomfort. With a family to care for and a company to run, this is very important to me.

I attribute some of these benefits to the high calorie days as well. On these days I got to eat all sorts of non-diet foods, within reason. And I got to eat till I was full, something you just don't get to do very often when trying to lose weight.

There's more to it than the psychological aspects, though. I'm fairly confident there are some small metabolic and hormonal advantages to having at least one higher-calorie day each week, especially when you're eating at a deficit for the rest of the week, you incorporate a day of fasting, and you plan on eating this way for a while. They might not be obvious in the short run, but I think something is going on.

In addition, on the fasting days, I had lots of time for other things. I discovered how much time cooking, eating, and cleaning takes. Plus, after a solid day of fasting, I felt "cleaned out" and ready for another great week of fat loss. Again, I suspect there's more to it than the psychological element – there may be some small metabolic and hormonal advantages to one extended fast per week. Nothing I could measure, though.

The Weekly Fast: lessons learned

Now for the moment of truth: Was this plan more effective than conventional dieting approaches for fat loss? Here's what I found:

- **Fasting once a week as described above worked very well, but wasn't measurably better than conventional dieting.** Compared to previous fat loss experiments, I didn't lose fat faster, preserve muscle mass better, or even end up with a healthier blood profile using this IF strategy.
- **I did, however, enjoy it more.** In terms of my mood, energy, and lifestyle, as well as in terms of compliance, I'd say this first experiment was a big success. I enjoyed the plan a lot more while still losing fat – and preserving lean mass – at an acceptable rate. All good things.
- **I'd fast this way again.** This is a definitely an eating style I'd use again in the future if I had to drop some body fat or refine my body composition. I may even use it just to remind myself what real physiological hunger feels like. It's easy to forget over time.

- **Weekly fasting suited my lifestyle quite well.** Personally, as long as I mitigate the early “side effects” of full-day fasting, I can skip eating one day per week, compensating for the no calorie fasting day with a higher calorie “eat what I want” day, and lose fat, preserve lean mass, and not suffer most of the typical diet-related complaints. That’s a pretty cool revelation, and a fun experiment to try at home. *Of course, your mileage may vary.*

But what about skipping *two* days of eating? Now that’s another story.

CHAPTER 5

The Twice-Weekly Fast: When Things Go Horribly Wrong

My first fasting experiment was a relative success, but at the 8-week mark, my fat/weight loss progress slowed down. I itched to try something new.

With a few *very small* modifications to my exercise plan (like spending an extra 30 minutes in the gym per week) or a few changes to my daily intake (like dropping my calories to 2,300 per day), I'm sure I could have continued with the current plan, losing about a pound of body weight per week right up until I reached my goal.

In fact, that would have been the *right* thing to do.

(It's certainly what I would have recommended to a client. I tell my clients that the best next step when hitting a fat-loss plateau is to make the smallest possible improvement.)

Yet I was in full-blown self-experimentation mode and feeling a little extreme. So I threw caution to the wind, skipped my own advice, and did something a little more aggressive.

I added an extra day of fasting.

For this next phase, I decided to fast both on Sundays and on Wednesdays. It certainly sounded like a good idea at the time.

Experiment 2: The Twice-Weekly Fast

Here's what the new approach looked like:

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Exercise	Upper body strength exercise – 45 minutes	Treadmill sprints – 10 minutes	Upper body circuit exercise – 30 minutes	Treadmill sprints – 10 minutes	Lower body strength exercise – 45 minutes	100 push-ups before each meal	No exercise
Nutrition	Moderate calorie intake (2500 kcal)	Moderate calorie intake (2500 kcal)	Fast until Thursday morning (0 kcal)	Moderate calorie intake (2500 kcal)	Moderate calorie intake (2500 kcal)	Eat whatever I want, stopping at 10 PM (5000 kcal)	Fast until Monday morning (0 kcal)

To make sure I was doing a decent job experimentally, I kept my exercise program the same (although I was using a progression model – working a little harder, but not longer – each week in the gym), and I kept the eating rules and meals fairly constant. The only real difference was the extra day of fasting.

The logic here was that since I had lost body weight and my weight loss was actually slowing, my body was reaching a lower energy balance point. (When you lose weight, your total daily calorie needs drop because you're lighter.)

If this were true, the additional fasting day would give me a new calorie deficit of about 2500 calories per week (or roughly 350 calories per day when averaged out). This, I figured, would kick-start additional fat loss.

What a great lesson in what *not* to do! Within two weeks of my new experiment, my morning weight had plummeted from 178 pounds to 171, with an estimated 4 additional pounds of fat lost... but 3 pounds of lean mass lost.

Yes, my plan worked... kind of. I was still losing weight and fat. But now I was feeling small and weak, losing too much weight too fast. People even started commenting on how “drawn and depleted” I was looking, especially in my face.

Worse yet, I was feeling really low in energy – much worse than during my historical fat loss approach. Training was becoming a struggle. Heck, getting off the couch was becoming a struggle, especially later in the day.

Of course, all these “side effects” are well-explained by science. But I didn't care. Research papers weren't making me feel any better when I had to peel my butt off the couch to take my daughter to the park.

Another major problem: I was becoming obsessively preoccupied by high fat, high sugar food. In fact, food was all I could think about. On my “eat what I want days” I went crazy and no longer ate what I wanted. Instead, I binged, made myself sick, and generally felt terrible.

NOTE FROM KRISTA: DO LESS

I had a similar experience to JB when I combined more frequent IF with heavy training for several months – another thing not to do.

In particular, people commented on how awful my face looked. (Thanks, guys.) I was lean (about 15%), but still a normal weight (110 lb at 5'0”). Family members worried that I had a terminal disease. One person even told me I looked like a prison camp inmate. Not exactly the look most of us are striving for.

When it comes to fasting, do just enough to meet your goals. And maybe even a little bit less than you think you “need.” Don't overshoot your body's capacity to recover, unless you want to look (and feel) like the proverbial Death sucking on a cracker. More on that below.

The Twice-Weekly Fast, 2.0

Obviously, something had to change. I was still committed to the 2-day-a-week thing, so I decided to do an emergency revision. To help bump up my weekly calorie average, and to feed the crazy food-obsessed monster raging inside me, I added another “eat what I want day.”

Here’s what the new plan looked like:

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Exercise	Upper body strength exercise – 45 minutes	Treadmill sprints – 10 minutes And 100 push-ups before each meal	Upper body circuit exercise – 30 minutes	Treadmill sprints – 10 minutes	Lower body strength exercise – 45 minutes	100 push-ups before each meal	No exercise
Nutrition	Moderate calorie intake (2500 kcal)	Eat whatever I want, stopping at 10 PM (5000 kcal)	Fast until Thursday morning (0 kcal)	Moderate calorie intake (2500 kcal)	Moderate calorie intake (2500 kcal)	Eat whatever I want, stopping at 10 PM (5000 kcal)	Fast until Monday morning (0 kcal)

Fortunately, this revision turned things around.

Within 2 weeks, my weight stabilized at 171-172 pounds on my reference day, and I felt a little better. But my body was all over the place. After my higher calorie days I would weigh in at a full and bloated 177-178 pounds. After my fasting days I’d weigh in at a leaner but flat-looking 168-169 pounds.

I didn’t like how I looked or felt with these sorts of weight fluctuations. And I was still preoccupied with food. It wasn’t quite as bad as I felt during the previous two weeks, but I was still counting down the minutes to my high-calorie days. And when those days arrived, I would waste most of them thinking about and searching for high-calorie meals. My daughter loved the trips to Dairy Queen, but I wasn’t having fun anymore.

So what do I think of twice-per-week fasting? Not productive. Not mentally healthy. Not for me.

I’m sure I could have tried additional tweaks to my non-fasting days, but after a month of experimenting, it was time for something new.

NOTE FROM KRISTA: FOOD CRAVINGS AND OBSESSIONS

In 2008, I sent JB a sheepish email: Ever heard of fat cravings? Like, not fat plus carbs... but pure fat?

At the time, he hadn't, but he helpfully pointed me to some studies. What I didn't tell him then was that I was bingeing on straight-up fat like a woman possessed, spooning nut butter out of the jar like it was a bowl

of soup. My body wanted fat – butter, nuts, cream, olive oil... heck, even beef tallow was looking good.

Later, I suspect JB got up close and personal with the wacky food cravings and binge eating that can accompany over-zealous fasting combined with low calories and intense training. In my case, I'd been training hard in BJJ and Olympic weightlifting, using IF to help cut weight for competitions and trying to stay lean.

My body's revenge for this foolishness was swift and decisive: Plop into the butter dish. Inhale 10,000 calories.

I tried harder. Fasted more often. Fasted longer. Which ended in more, and more epic, binges.

My first thought every morning, after I woke from a fitful, hormone-disrupted sleep at 4 am when my body dumped adrenaline into the system to free up blood sugar because cortisol wasn't working

any more, was: How can I eat... or not eat... today?

Repeat until insane.

If you're considering IF as part of a fat loss program, use it wisely.

If strong food cravings and binge behaviours appear repeatedly (especially if you are using IF to compensate for binges, or as a means to control and restrict your food intake), treat them as a signal from your body. Pay attention.

The Twice-Weekly Fast: lessons learned

With another month under my belt – three months in and 18-19 pounds lost – what did I learn?

First, I can skip eating one day per week, compensating for the fasting with a higher calorie day and do pretty well as long as I didn't train on the fasting day and as long as I was mindful with friends and family.

However, under the same conditions, when I add another day of fasting, I lose weight much too quickly and feel terrible. Even if I try to compensate for the extra fasting day with another higher calorie day, my weight stabilizes, but something still feels terribly wrong.

So let this be a cautionary tale: Do as I say, not as I did. (I've learned my lesson.)

IF YOUR PROGRAM HAS STOPPED WORKING, MAKE THE SMALLEST POSSIBLE CHANGE THAT'S LIKELY TO GET YOU A MEASURABLE RESULT.

Don't jump ship and try something radical or drastically different.

**NOTE FROM KRISTA:
MORE WHAT NOT
TO DO**

This is generally a manual about what you should do, rather than what you shouldn't. However, our experiments demonstrate some clear rules about what not to do, which are worth sharing.

1. If some is good, more is not better.

Whether cure or poison, the magic is in the dose. Remember that fasting is a physiological stress. Keep it short, manageable, and intermittent.

2. Consider your overall stress load.

If you're dealing with a sick child, a demanding job, poor sleep, travel,

etc., do not add extensive fasting to this list. Stress includes training.

3. Do not train too much or too hard on a regular fasting program, especially if you are also cutting calories.

"Too much" will depend on you, but I'd say a good general guideline would be:

- *no more than 3-4 hours a week of heavier resistance training*
- *no more than 2-3 weekly – and brief – sessions of metabolic conditioning (i.e. intervals, high-intensity cardio, circuit training)*
- *no more than 1-2 hours a week of moderate intensity cardio (if any)*

Endurance athletes, get real about your mileage. I was cycling and running several hours a week, often while fasted. And hardcore Crossfitters, I'm looking at you too. You know you love to push those body boundaries and finish your workouts with the puke bucket.

I thought I was "getting fit" and being a badass. I was being stupid, and doing everything I'd tell clients not to do. (Apparently JB and I have the same problem.)

Whether it's total training time or intensity, overdoing it combined with fasting is a very, very bad idea. My experimental findings were painfully clear: Don't do this.

4. However, low-intensity "rambling"-type exercise pairs nicely with IF.

Our ancestors didn't kill themselves with tough training sessions. In fact, they wanted to do the opposite: conserve valuable energy and stay uninjured as long as possible. Most of their "exercise" was simply low-intensity "rambling," such as walking, which goes perfectly with fasting.

If you're looking for fat loss and overall health, try reducing your high-intensity training and adding more daily-life "rambling"-type movement.

Also, my experience may highlight the risk of restricting calories too much when exercising regularly and intensely.

If I wasn't exercising regularly, two days of fasting might have worked perfectly. However, with this fairly intense exercise effort, the stress of the exercise, plus the calorie restriction, it all may have been too much. Of course, this is just speculation.

I regrouped and started on my next experiment.

NOTE FROM KRISTA: HORMONAL HEALTH

Had JB peeked inside his body during this twice-weekly fasting experiment, he might have found that his sex hormone production – e.g. his testosterone, DHEA, LH/FSH, etc. – was going down. For guys, this means mood swings, muscle loss, low energy, and a general absence of mojo. Luckily, with some refeeding and good food choices (including eating enough protein and fat), many men's sex hormones can be easily revived.

For women, the consequences can be somewhat more serious. Our hormonal systems seem to be much more

sensitive to energy intake and fluctuations in food intake than men's. Unfortunately, we health- and body-conscious women are likely to do exactly the things we shouldn't: we exercise too much (especially endurance training and "cardio") and eat too little (especially of the nutrients we need). Female vegetarians/vegans are particularly at risk.

Women, your menstrual cycle is the proverbial canary in the coal mine – it's an early indicator of hormonal disruption. When your period gets irregular and temperamental – or worse, disappears – you have a problem.

In my case, too-frequent fasting combined with too-heavy training as well as general life stress and an anxious temperament resulted in estrogen, progesterone, DHEA, LH/FSH and cortisol levels that were effectively zero. Nothing. Zilch. My hypothalamus, pituitary, adrenals, and ovaries closed up shop. Hormonally speaking, there was nothing left but dust and tumbleweeds. I was in my mid-30s and menopausal. I've seen this situation in many of my female clients – some as young as their mid-20s.

Obviously, if you're pregnant, long periods of fasting are a bad idea.

Both sexes can be affected by adrenal injury or thyroid problems from too much physiological stress for too long.

I still think IF is great stuff for improving many hormonal health indicators, particularly insulin sensitivity. This can have benefits for your sex hormones if you have conditions such as PCOS (in women) or over-conversion of testosterone to estrogen (in men).

But for hormonal health, you must apply IF cautiously, safely, and sanely. And if your body speaks, listen.

So to summarize the twice-weekly fasting experience:

- **One day of fasting per week, good.** Once a week is the sweet spot for me and my lifestyle.
- **Two days of fasting per week, bad.** Increasing to two separate fasting days, even with all the extra calories to compensate, was just too much for me to handle.

At this point, I even thought about wrapping this whole project up. After all, I was three months in and I had reached my goal weight and ideal body fat percentage.

I was also getting tired of planning and recording. Annoyed with the food preoccupation that began when I fasted twice per week. And upset at my lack of focus and irritation with friends and family.

Yet I was on a mission. I still wanted to take some of these shorter-duration fasting methods – the ones people claimed to be more physique-friendly – for a test drive. Maybe they'd work better?

I regrouped and started on my next experiment.

CHAPTER 6

The Daily Fast: Back on Track

So far, my experiments revolved around entire days of fasting, with varying success. However, in the IF movement, some fasting proponents prefer shorter, more targeted fasts, especially for those who work out and are interested in improving both health and body composition.

Perhaps the most prominent is Martin Berkhan, who is something of a nutritional contrarian. He blogs about loving alcohol, skipping breakfast, training in a fasted state, eating carbs before bed, and only eating 2-3 meals per day. Despite not following more commonly established “healthy eating rules,” he boasts of a 600-pound deadlift and a lean, muscular body, while claiming to never have used any muscle-building drugs.

Intrigued, I decided to play around with his ideas, which he calls the “Leangains” method.

The Leangains program is based on a few simple rules.

- Fast 16 hours every day.
- Eat within an 8-hour window every day.
- Exercise with high intensity, a few times per week, often while still in a fasted state.
- Use 10 g of BCAA before or during your exercise session.
- On your exercise days, eat 2-3 big meals of protein (meat), veggies, and carbs.
- Eat your largest meal directly after your workout.
- On non-exercise days, eat 2-3 meals of protein (meat), veggies, and fats.
- Eat mostly whole, minimally processed foods, instead of processed foods or supplements.

As you can see from my description, this isn't just intermittent fasting; there's actually a lot more going on. In fact, the approach is based on a whole host of well-accepted and non-controversial practices:

- High protein intake
- Low processed food intake

- Carb cycling
- Calorie cycling
- Nutrient timing

All solid strategies for body composition, fitness, and overall health to begin with. To those, Leangains adds a few experimental twists.

What makes this approach different?

Here's where Leangains departs from more conventional nutritional methods.

FASTING

Most coaches are fine with a 12/12 schedule (12-hour fasting, 12-hour feeding window). Berkhan prefers extending it to 16/8 (16 hours of fasting, 8-hour feeding window.)

BREAKFAST

Most coaches recommend it; Berkhan skips it as a natural part of the extended fast.

EXERCISE

Most coaches recommend eating prior to training; Berkhan usually uses a small dose of BCAA instead.

EATING FREQUENCY

Most coaches recommend 4-6 small meals; Berkhan says have 2-3 larger ones.

In my opinion, these are minor points of departure from the more commonly accepted nutritional best practices. But are they significant enough to make a difference?

What's the logic here?

The Leangains protocol attempts to use the extended fast (and fasted workout stimulus) as a powerful time of fat-burning. According to Berkhan, fasting (and training) this way means:

- Blood flow to fat cells increases.
- Concentrations of epinephrine and norepinephrine go up.
- Metabolic rate goes up slightly.
- Insulin goes down.
- Fatty acids are released for energy.

Berkhan reasons that this scenario is the perfect storm for fat loss.

However, as discussed earlier, extending the fast for too long could become counterproductive. So Berkhan suggests jamming in as many growth and recovery promoting nutrients as possible after the fast and during the post-workout period – without overeating, of course.

After intense exercise, the body is most sensitive to nutrient uptake and subsequent protein synthesis. Thus, he recommends eating as much of your food as possible as

NOTE FROM KRISTA: START SLOW

If this style of fasting appeals to you, you don't have to jump right into it.

I started gradually: by simply pushing back my meals a bit. If dinner was normally at 7 PM, I'd eat at 6 PM instead. Next day, at 5 PM. Next day, at 4 PM. And so on. Same idea with breakfast. Try eating half an hour or an hour later than normal.

Like salivating dogs, our appetite hormones are trainable, and they're driven largely by our routines. They make us hungry when we expect to be hungry. If we have dinner every day promptly at 7, we can count on Ye Olde Hunger Hormone Factorie to start firing up around 6:30.

Thus, you can use the "cold turkey" method of just jumping into a 16-hour fast, or you can "train" your appetite hormones to adjust slowly. From my fasting experiences, it seems that in many ways, hormones are just as "trainable" as any other skill.

You get "better" at doing things when you practice... and it almost never hurts to start slowly.

soon after your workout as you can. In practice, that means eating your largest meal of the day immediately after your workout.

With this plan, Berkhan reasons, you get fat-burning during one long, 16-hour stretch of the day and lean muscle building during another 8-hour stretch.

Each day is the same. Rinse and repeat.

The Daily Fast: the program

I wanted to test these theories. So I committed to following the Leangains principles fairly closely for the next few weeks with the “shorter fasts, more often” approach.

I planned to fast for 16 hours each day – from 9 PM until around 1 PM (skipping breakfast along the way). I'd train at the end of the fast; starting my workout around noon and then eating 2-3 fairly large meals (depending on my hunger and the size of the meal) between the end of my workout and 9 PM.

As recommended, I also took 10 g of BCAAs (in capsule form) just before my workout. On my intense weight training days – Mondays and Fridays – my meals included mostly protein, veggies, and starchy carbs. And on the other 5 days, my meals contained mostly protein and veggies.

My schedule

Here's a single day's schedule.

8:00 am Wake up, drink 500 mL (2 cups) water

9:00 am Drink 1 L (4 cups) water with 1 serving greens+, 250 mL (1 cup) green tea

11:00 am 250 mL (1 cup) green tea

Noon Workout session with 10 g BCAA during session

1:30 PM Eat first meal, largest of the day

4:30 PM Eat second meal, moderate sized meal

8:30 PM Eat third meal, moderate sized meal

Here's what a week of the plan looked like:

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Exercise	Upper body strength exercise – 45 minutes 100 push-ups before each meal	Treadmill sprints – 10 minutes	Upper body circuit exercise – 30 minutes	Treadmill sprints – 10 minutes	Lower body strength exercise – 45 minutes 100 push-ups before each meal	No exercise	No exercise
Nutrition	Higher calorie and carb (3200 kcal)	Lower calorie and carb (2200 kcal)	Lower calorie and carb (2200 kcal)	Lower calorie and carb (2200 kcal)	Higher calorie and carb (3200 kcal)	Lower calorie and carb (2200 kcal)	Lower calorie and carb (2200 kcal)

As you can see, there were no “eat whatever I want” days and no days of complete fasting, as I’d used in the previous plans. Just a daily 16-hour fast followed by a workout and then an 8-hour feeding period.

There were also 2 higher calorie and higher carb days and 5 lower calorie and lower carb days. Despite the differences between this plan and previous plans, my average calorie intake was still around the same: 2500 calories per day.

**NOTE FROM KRISTA:
WHEN IS THE “RIGHT”
TIME TO FAST?**

There’s no good answer – although, of course, there are many theories.

I didn’t want to give up my big breakfasts, so I chose evening fasting first. I simply pushed dinner earlier and earlier until I eliminated it completely. I normally

trained in the mornings, so this worked for me.

However, I noticed three things about my sleep when fasting in the afternoons/evenings. First, I was much more tired. Once my “battery” ran out, I was done. Getting up the stairs to bed was a terrific ordeal.

Second, although I’d conk out quickly, I didn’t sleep well. And third, I woke

up early – at a consistent 4 am – when my body released adrenaline to free up some stored blood sugar. Since many of our hormones run on a day-night cycle, this blast of adrenaline was nearly as accurate – and painful – as a buzzing alarm clock.

Later, I experimented with skipping breakfast and lunch. At first, that felt like much more of

a sacrifice, but it took advantage of the fact that I was already deep into the better part of fasting after 10-12 hours overnight. Eventually I got to like the efficiency of getting up, grabbing a cup of tea, and getting straight to work. And I slept a lot better after a good meal in the evenings.

Bottom line, as always: Do what works for you.

What I ate during the Daily Fast

Of course, my food rules had to change a little.

First, I needed to cram the same number of calories – especially on the high-carb days – into 2-3 daily meals instead of 4 meals. Second, I needed to gradually taper down my calorie intake after the post-workout meal.

With this in mind, my menu looked like this, although it did vary from day to day:

LOW CALORIE, LOW CARB DAYS

MEAL 1: IMMEDIATELY AFTER EXERCISE

- 4 palms of protein (about 100 g of protein)
- 3 fists of veggies
- 1/2 handful of raw nuts
- 1/2 handful of legumes
- 500 mL (2 cups) of water

MEAL 2: ABOUT 3 HOURS LATER

- 3 palms of protein (about 75 g of protein)
- 3 fists of veggies
- 1/2 handful of raw nuts
- 1/2 handful of legumes
- 500 mL (2 cups) of water

MEAL 3: ABOUT 4 HOURS LATER

- 2 palms of protein (about 50 g of protein)
- 2 fists of veggies
- 1/2 handful of raw nuts
- 500 mL (2 cups) of water

DAILY SUPPLEMENTS:

- 1 multi-vitamin
- 4000 IU vitamin D
- 1 tablespoon fish oil
- 10 g BCAA capsules before workouts

HIGH CALORIE, HIGH CARB DAYS

MEAL 1: IMMEDIATELY AFTER EXERCISE

- 4 palms of protein (about 100 g of protein)
- 3 fists of veggies
- 2 fists of starchy carbohydrate (about 100 g carbohydrate)
- 1/2 handful of raw nuts
- 1/2 handful of legumes
- 500 mL (2 cups) of water

MEAL 2: ABOUT 3 HOURS LATER

- 3 palms of protein (about 75g of protein)
- 3 fists of veggies
- 1 fist of starchy carbohydrate (about 50 g carbohydrate)
- 1/2 handful of raw nuts
- 1/2 handful of legumes
- 500 mL (2 cups) of water

MEAL 3: ABOUT 4 HOURS LATER

- 2 palms of protein (about 50 g of protein)
- 2 fists of veggies
- 1 fist of starchy carbohydrate (about 50 g carbohydrate)
- 1/2 handful of raw nuts
- 500 mL (2 cups) of water

DAILY SUPPLEMENTS:

- 1 multi-vitamin
- 4000 IU vitamin D
- 1 tablespoon fish oil
- 10 g BCAA capsules before workouts

Another reminder to the obsessive-compulsive: I wasn't counting calories in or calories out. I just followed this general plan and wrote down what I ate in a little notebook. I analyzed everything much later, so I could report the results in this book.

SAMPLE MEALS – LOWER CALORIE AND CARB DAYS

Here are some samples of meals I ate during the lower calorie and carb days:

Sample Meal 1

- 16 oz extra lean beef burgers
- 3 cups of cole slaw, broccoli slaw, and carrot slaw salad
- 1/4 cup of chickpeas mixed in salad
- 2 tbsp raw mixed nuts in salad
- Salt, pepper
- 2 tbsp white vinegar as dressing
- 2 tsp Udo's oil as dressing

Sample Meal 2

- 12 oz scallops
- 3 cups of frozen vegetable medley
- 1/4 cup of black beans mixed in salad
- 2 tbsp raw mixed nuts in salad
- Salt, pepper
- 2 tbsp white vinegar as dressing
- 2 tsp lemon flavoured fish oil as dressing

Sample Meal 3

- 9 oz turkey sausage
- 2 cups of spinach, tomato, green pepper, and onion salad
- 1/4 cup of kidney beans mixed in salad
- 1/2 cup home-made guacamole in salad
- Salt, pepper
- 2 tsp Udo's oil as dressing

Sample Meal 4

- 3 scoops of protein powder
- 2 tbsp raw mixed nuts
- 2 tbsp natural peanut butter
- 2 tbsp raw cacao nibs
- A few tablespoons of unsweetened almond milk mixed in

SAMPLE MEALS – HIGHER CALORIE AND CARB DAYS

Here are some samples of what I ate during the higher calorie and carb days:

Sample Meal 1

- 4 whole eggs, 3 egg whites
- 2 slices chicken bacon
- 1/2 cup refried beans
- 1/2 red pepper
- 1/2 cup oatmeal with raspberries and blueberries
- 1 scoop protein powder
- 1 tbsp peanut butter

Sample Meal 2

- 16 oz steak
- 15 asparagus spears
- 12 oz sweet potato fried in coconut oil
- Salt, pepper

Sample Meal 3

- 8 oz tuna steak
- 3 cups salad with Italian dressing
- 1 cup cole slaw
- 1 cup wild rice

Sample Meal 4

- 3 scoops of protein powder
- 2 cups raspberries and blueberries
- 1 tbsp raw mixed nuts
- 1 tbsp natural peanut butter
- 1 tbsp raw cacao nibs
- A few tablespoons of almond milk mixed in

While most of my higher carb meals during this phase looked something like this, there were a few times during this month, on the higher calorie days, when I ate a post-workout bacon cheeseburger, a few slices of vegetarian pizza, and a few hot wings, making sure to enjoy these foods, while still keeping my total intake in check. (I didn't have a single binge session, which was awesome.)

Here's what one of those meals looked like:

- 6 oz beef burger with 1 slice of bacon and 1 slice of cheese (no bun)
- Lettuce, tomato, onion, ketchup
- 1 cup of salad with Italian dressing
- 3 slices vegetarian pizza
- 4 hot wings

ON “CLEAN” FOOD VS. “JUNK” FOOD.

Let's be clear. I didn't go for pizza and wings regularly. I really do prefer eating lean meats, loads of colourful veggies, and more natural, unprocessed carbohydrates, and I eat this way 90% of the time. It's much more physique- and health-friendly to eat real, whole foods most of the time.

Yet I'm also careful not to let orthorexia – a psychological term for developing a fixation with healthy or righteous eating – sneak into my lifestyle. Yes, food quality is on a continuum and some foods are “higher quality” than others. But it's not an all-or-nothing, “good” versus “bad” thing. Using “healthy” or “unhealthy” to qualify food choices isn't all that useful. In some cases, it's

downright confusing.

Most importantly for this book, occasionally eating “lower quality” food won't likely harm your physique or health. Just don't eat too much of it, too often.

Bottom line: If you ever choose to follow an approach like this, make sure you eat high quality foods most of the time, while allowing a little latitude too. Of course, you don't have to eat “junk food.” But do

allow yourself to have a few “whatever you want” meals after working out.

Just be sure to follow the rest of the rules. Get enough protein, some carbs, some veggies, don't eat too much relative to your own needs, and don't eat so much that you make yourself sick. You'll feel terrible (especially if your stomach is used to going without food for long periods), and it won't help your progress or health..

So, how did this style of eating work out for me?

The Daily Fast: the results

This plan went really well. We have another winner... almost.

BODY WEIGHT

Within the first four weeks my weight actually increased by about 4 pounds, from 171 pounds to 175 pounds on my reference day. According to my body fat measures, this increase was all lean mass with no body fat. Very impressive, considering my weekly calorie average was about the same.

(I'm guessing this weight increase is a function of increased carbohydrate stores and body water stores, which increase as carbohydrate stores increase. With two higher carbohydrate days per week and no extra fasts, this makes sense.)

In addition, the wild weight fluctuations I saw in the last phase were almost completely gone. The most I'd fluctuate from day to day was about 1-2 pounds, which is pretty normal.

MOOD AND ENERGY: CAUTIOUS OPTIMISM

In addition to my body composition, I started feeling better within 14 days.

However, be warned.

I did go through a rough transitional period while my body adapted to this program.

Here are some of the things I experienced for the first 10-14 days:

- I really missed breakfast, both physiologically and psychologically. Massive stomach rumblings. Hunger cravings. Low mental focus until my first meal. And big-time morning moodiness. I did my best to stave off the breakfast cravings with a greens+shake in 1 L of water and a few cups of green tea or coffee, which helped. But I still felt really bad.
- Speaking to the mood problems, I was cranky and unfocused from my wake-up time of 8 am until my workout at noon. I was mentally sluggish. Sometimes when speaking to my wife or a member of my team, I spoke so slowly that they must have thought I had a stroke overnight. Of course, this affected my relationships and my work. I started ignoring my family until after my first meal. I never scheduled meetings before 1 PM.
- I should also note that for the first 10-14 days I was much quicker to anger than usual. Comments or situations that I would have been able to let slide just a few weeks earlier lead me down an unhealthy path of smart-ass comments or bubbling rage. It got to the point that I didn't even like being around myself. Luckily, I told my friends and family what was going on. And they're a pretty understanding bunch. Also, I had some practice in the art of mindful interaction and self-soothing from the one-day fasts.

As a result of these experiences, I felt like bailing on the plan altogether during the first few days. However, because I've dieted before, I knew that these feelings are pretty normal when in a negative energy balance. I also knew that the body typically adapts in a few weeks. So I kept going.

ONE CLIENT'S EXPERIENCE.

One of my clients who's following this approach sent me the following email, which highlights some of the early pros and cons of this approach:

"I thought I'd be more productive in the morning yesterday and today, but I'm almost catatonic. On the plus side, I've dropped about 10 lbs in a week, not all of it water.

Compared to where I was

when I got back from vacation, it's night and day. People are noticing it right away, in normal clothes. Some of it is also probably attributable to the addition of caffeine (of which I had had only miniscule amounts for the last year), but not all. This is super effective.

The only downsides are that I think this would be disastrous for anyone with a history of disordered eating (probably a significant number of

your clients and readers) because it makes me almost obsessed with food.

A one-habit approach is definitely a more solid, healthy way to go because I feel this may feed people's obsessions and hinder the development of a healthy, sane approach to eating. But that's just conjecture on my part.

The other downside is that without having pre-prepared healthy meals waiting for me after the workout, I (personally)

would be totally screwed. I'm certain I'd binge. The discipline to prepare your food in advance would HAVE to be there, otherwise I suspect this diet would fail early and badly. But I suppose that's true of most calorie restricted diets anyway.

The upside is that it feeds into the instant gratification side of my mind. Seeing substantial results just four days in is super motivating, at least for me."

As I expected, something magic happened after 10-14 days on the plan. Thanks to some key changes in my metabolic and neuroendocrine systems, everything got better.

I pretty much stopped thinking about breakfast altogether by the 10-day mark. By 12 days, my moodiness was in check. And by 14 days, I was productive again. Not only was I back to normal, I was actually starting to enjoy the program.

My gym workouts got substantially better than they had been for a few months since I started the experimentation. In fact, they seemed as good as my pre-fasting days. In addition to having more energy to train and lifting heavier weights, I started to get really great pumps during my workouts. (“The pump” is the feeling of fullness you get in the muscle during a workout.) Considering I wasn’t eating anything except 10 grams of BCAA for 15-16 hours, it was weird, but understandable, if indeed my body carbohydrate and water stores went up.

LOOKIN’ SWOLE

Speaking of the pump thing, I started to appear more vascular during my workouts and after, which means that the veins in my arms, legs, and even abdominal area, started to become more prominent. This effect only shows up in very lean people who have even blood flow and are able to maintain a normal blood volume.

With this protocol, even my friends and training partners started commenting on how much more muscular and vascular I was looking, even though I was only a few pounds heavier. It was also weird because just a few weeks prior they were saying how scrawny and sickly I looked. It’s amazing what a few pounds of well-proportioned muscle glycogen and water can do visually.

FOOD ISSUES

One of the most welcome changes, beyond the great workouts and improved appearance, was that the weird food compulsions went away. The insistent food and carb cravings I suffered during the last month completely disappeared.

I slipped into an easy-to-follow routine of skipping breakfast, training at noon, eating a few well-planned meals before bed – some days more, some days less – and repeating it all the next day. Very tolerable and sustainable considering my lifestyle.

SOME ADDITIONAL CHALLENGES

But it wasn’t all roses. There were a few other things worth mentioning.

Body Temperature and Cold Extremities

Beyond the breakfast transition I had to go through – which might be minimized with the slow adjustment period Krista recommends – each morning I’d get colder and colder as the fast extended, especially in my hands and feet. Even in the sunshine, while drinking hot green tea, I’d be shivering. It wasn’t terrible, but it was annoying. I verified this same pattern in two different clients who also tried this IF approach. Interestingly, I didn’t experience this same effect with the full day fasts.

Some speculate I should be thankful for the cold extremities, as fasting may increase blood flow to adipose cells, helping them release fatty acids for eventual burning. Because of this, it may also cause vasoconstriction of the peripheral vasculature, namely fingers and toes. If this is true, I guess a little extra fat loss is worth the shivering. (There’s a lot of speculation here, though, so I’m not yet convinced.)

ON VASCULARITY AND BLOOD PRESSURE/ VOLUME

When you see someone who’s very lean, but not vascular, it means one of two things: either they’re cold and blood is being shunted to their core to preserve their core temperature, or their blood volume and blood pressure have dropped, usually due to a low carbohydrate intake and low body fluid levels.

In the past when I dieted hard and got very lean using lower carbohydrate diets, my blood pressure would drop down. (I used to do research with a cardiovascular medicine group and used ambulatory blood pressure monitors to measure this. My lowest recorded blood pressure was 75/35.) During those days, if I wanted to appear more vascular, I’d have to eat a bunch of carbohydrates, add sodium to my diet, and drink more water. Do that, and voilà: blood pressure pops up to 110/70 and you get instant vascularity.

Appetite and Fullness

Another odd annoyance was struggling with the larger meals. I know some people love stuffing themselves and many IF proponents rave about this aspect of IF-style eating. Because you have to meet your daily calorie quota within fewer meals, you sometimes have to eat until you're feeling more than 100% full. For many chronic dieters, this is like a dream, since they're used to smaller meals that leave them "unsatisfied."

For me, it wasn't a huge selling point. At times the meals felt too big, like I was force-feeding myself. (Sometimes I wasn't even able to finish my 1000–1500 calorie meals.) While I certainly don't prefer tiny, unsatisfying meals, I don't need to swing to the opposite end of the spectrum to feel good about things. Fortunately, just like my breakfast cravings, I adapted to feeling full in roughly two weeks.

Mental Performance

It's fairly common to struggle during the first few weeks of any new dieting approach, whether it's a low carb diet, calorie restriction, or IF. Before the body adapts to the new calorie balance and new pattern of fuel utilization, there are all sorts of physical and mental complaints. However, after the initial period of adaptation, most people start feeling better.

After I adapted to the 16/8 pattern, the first thing I noticed – mentally – was an extremely acute improvement in focus and concentration, especially during the fasting part of each day. (Many IF proponents talk about this effect, and I can definitely corroborate it.) During this time, I found it very easy to ignore distractions and focus deeply on single tasks. Of course, this granted me a big boon in productivity. When doing analytical tasks – the work traditionally thought of as "left brain" – my performance was greatly enhanced. Everything from statistics to article editing was easier to dig into. I was excited.

Unfortunately, I quickly realized that what I gained in focus and analytical performance, I lost in creative, synthetic thinking – the work traditionally thought of as "right brain." While I worked really well alone, real-time collaboration with others suffered big-time during the fasting portion of my day. In addition, my early morning article-writing and strategic thinking sessions were worse than ever.

Once I noticed this pattern, the solution was straightforward. I shifted my "left brain" work to the first half of the day. So, no meetings, no real-time collaborative work, and no article writing before eating. Instead, I focused on editing, statistics, and project management. Then, I shifted my "right brain" work to later in the day.

Body Weight

One last thing worth mentioning, relative to my goals: Although this new approach was working out fairly well, I was actually gaining weight. While this is a very cool observation, and likely explained by increased glycogen and body water, I didn't actually want to be heavier. Instead, I wanted to maintain my weight in the 170-175 pound range. I had to do something.

THE AMAZING, ADAPTABLE METABOLISM

I never cease to be amazed at how adaptable the body is. In two weeks, I went from being "a serious breakfast person" to not needing breakfast at all, likely due to something called the "hormonal entrainment of meal patterns."

Because of this, one can literally train themselves to love and crave breakfast even if they think they're "not a breakfast person." Likewise, they can train themselves to easily skip breakfast even if they think they're "a total breakfast person." It just takes a few weeks to adapt, and most people give up before they reach this point. Fascinating stuff.

Also, in two weeks I went from being stuffed with every single meal to feeling a little more normal. Again, physiological adaptations like these – and there are lots of them – do take about two weeks to kick in. Therefore, when trying any new and different exercise and nutrition approach, don't bail at the first sign of discomfort. Give yourself two weeks to adapt. That's usually when the magic happens.

The Daily Fast: version 2.0

My next outcome-based decision was to modify the 16-hour fasting/8-hour feeding schedule to create more of a negative energy balance that would drive my weight back down.

I had a couple of options here:

- I could increase my exercise volume, which I didn't really want to do, since more exercise with fewer calories usually makes people feel terrible.
- Or I could reduce my weekly calorie average, which is what I decided to try.

With lots of options for reducing calorie intake at my disposal, I decided to go back to where I started: the one-day-a-week fast. According to this plan, I'd keep following the 16-hour fasts Monday through Saturday, but I'd incorporate a full day of fasting on Sunday.

A NOTE ON OUTCOME-BASED DECISION MAKING

I hope it's now becoming obvious how I make my exercise and nutrition decisions when trying to achieve a goal. In fact, this is how I make almost all of my decisions when going after a goal.

I call the process "outcome-based decision making," and it goes like this:

- 1. Try something that makes sense, is simple, and that you can do every day.*
- 2. Commit to doing this one action every day for a reasonable period of time, usually a few weeks.*
- 3. Measure the things that'll give you objective feedback on how it's going.*
- 4. Stick with the intervention until your pre-determined time is up, even if your measures go up and down.*
- 5. Assess the success of your actions based on the overall measures – the general trend over time.*
- 6. At the end of the pre-determined period, if the intervention's working, keep doing it.*
- 7. If it's not working, or stops working, make a small change, one you're confident you can do.*
- 8. Keep repeating until you reach your goal.*

*While the process seems like common sense, it's damn hard to follow and takes uncommon patience and discipline. When we want to reach a goal badly enough, the days can seem long and progress can feel exceptionally slow. That's why you have to remember that **any progress you make is great**. In fact, this has to become your mantra.*

Lost only half a pound in two weeks? That's great. In a year you'll be down 25 pounds while your friends will have gained 5-10 pounds.

Know someone who's making faster progress than you? That's nice. Just don't forget that 95%

of the people who crash diet and lose 15 pounds will gain 25 back for their trouble. Like most people, they made the weight loss project either physically or practically unsustainable.

Losing weight fast often means a huge calorie deficit, and a huge deficit means an impending rebound. Also, working out like crazy or cloistering yourself away from food temptation leads to a rebound of a different kind.

By using outcome-based decisions and making the smallest reasonable change when your measurements tell you it's time to make a change, you're vastly more likely to succeed in the long term.

Here's what version 2.0 looked like:

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Exercise	Upper body strength exercise – 45 minutes And 100 push-ups before each meal	Treadmill sprints – 10 minutes	Upper body circuit exercise – 30 minutes	Treadmill sprints – 10 minutes	Lower body strength exercise – 45 minutes And 100 push-ups before each meal	No exercise	No exercise
Nutrition	Higher calorie and carb (3200 kcal)	Lower calorie and carb (2200 kcal)	Lower calorie and carb (2200 kcal)	Lower calorie and carb (2200 kcal)	Higher calorie and carb (3200 kcal)	Lower calorie and carb (2200 kcal)	Fast until Monday morning (0 kcal)

As you probably guessed, I kept exercise time and volume the same (although I kept doing a little more and a little better each week in the gym). I also kept my food selections the same as the last phase. I simply didn't eat from Saturday night at 10 PM until Monday morning, using green tea, greens+, water, and BCAAs during the day on Sunday. This dropped my weekly calorie average by 2200 calories (or 300 every day).

As expected, my weight dropped again within these next two weeks. I shed about 4 pounds (2 pounds fat, 2 pounds lean), dropping down to 171 pounds on my reference day, which is right where I wanted to be. I maintained this for two additional weeks.

However, after getting used to eating every day for the prior month, and having success with the shorter fasts, I wasn't looking forward to the Sunday fasts any longer. They were starting to become a drag. And although I was getting extremely lean and looking like an anatomy chart, I was starting to feel sluggish on the days between the higher calorie and carb days. My enthusiasm for the workouts – and movement in general – was reaching a new low.

As I was looking for something that'd both help me achieve my body weight goals, as well as something I could stick to for as long as I wanted, I decided to make another small change after this month.

The Daily Fast: version 3.0

Wanting to stick with the 16/8 plan as laid out in Version 1.0, but not wanting to gain additional weight beyond 175 pounds, I decided to get rid of the full day fast on Sunday, opting to use a 20/4 approach on the weekends instead. So, I'd do the 16/8 thing for Monday through Friday and the 20/4 thing on Saturday and Sunday.

Here's what that plan looked like:

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Exercise	Upper body strength exercise – 45 minutes 100 push-ups before each meal	Treadmill sprints – 10 minutes	Upper body circuit exercise – 30 minutes	Treadmill sprints – 10 minutes	Lower body strength exercise – 45 minutes 100 push-ups before each meal	No exercise	No exercise
Nutrition	Higher calorie and carb (3200 kcal)	Lower calorie and carb (2200 kcal)	Lower calorie and carb (2200 kcal)	Lower calorie and carb (2200 kcal)	Higher calorie and carb (3200 kcal)	Fast until 5 PM, eat 1-2 lower carb meals (1500 kcal)	Fast until 5 PM, eat 1-2 lower carb meals (1500 kcal)

As I had done all along, I kept my workouts and food choices/rules the same. In fact, this program was very similar to my first shorter fast iteration; I just lengthened the fast by 4 hours on Saturday and Sunday, having 1-2 meals instead of 2-3 meals.

By making this shift, my weekly calorie average jumped by about 800 from the last program, giving me an extra 100 calories a day, on average. This made a big difference. Within the next two weeks, my weight increased to 173 pounds with surprisingly few day-to-day fluctuations. It remained there for another two weeks.

**NOTE FROM KRISTA:
FASTING AND
EXERCISE**

Studies of Muslim athletes who fast during Ramadan find that many athletes do worse in the early weeks of Ramadan. It takes time for the body to get used to fasted training. And your body may never really take to it.

However, research also shows that it depends on the exercise type and the athlete (more experienced athletes tend to have fewer problems). Research results vary widely. And

often, any difference in performance is small.

What seems to get worse, on average, with daily sunup-to-sundown fasts:

- activities that require more intense but longer effort (such as 200-400 m runs)
- speed endurance, such as repeated short, intense runs in soccer
- repeated power-explosive movements like jumping
- some types of strength
- work capacity

- how much athletes want to train or be generally active
- how well athletes thought they performed (which may not always be accurate)
- overall energy levels

What seems to be more or less unaffected:

- sprint performance
- single explosive movements, like one jump or a judo throw
- non-maximal lower-rep weight training
- overall aerobic capacity

- agility

Again, this isn't definitive, and it may not apply to you. Since fasting Muslims usually have a small breakfast, the results might be different with training after a full overnight fast (i.e. no breakfast).

After trial and error, I prefer to eat before really tough workouts. But I have no problem doing lower-intensity activities, such as moderate swimming or walking, fasted.

As always, experiment and find what works for you.

The Daily Fast: v2.0 and 3.0 lessons

I learned a lot about my body during these last few phases of experimentation.

1 LESSON | I REALLY LIKED AND DID WELL ON THE DAILY 16/8 LEANGAINS PROTOCOL.

After a terrible first two weeks on the program, my body finally adapted. I then felt strong, energetic, and very lean after another two weeks. Kudos to Martin Berkhan for really perfecting these general principles of eating and training. (Although damn you, Martin, for that transition period.)

However, as mentioned, the first plan I designed was causing my body weight to creep up. And although it was all “lean weight,” and lots of folks would love to have that “problem,” I needed to rein things in. That’s why I decided to try v2.0 – following 16/8 on Monday through Saturday and one full day of fasting on Sunday – and eventually v3.0 – 16/8 on Monday through Friday and 20/4 on Saturday and Sunday.

2 LESSON | WHILE I CAN DRIVE MY BODY WEIGHT DOWN INTO THE 170-171 POUND RANGE WITH LONGER, MORE FREQUENT FASTS, I DON'T FEEL GOOD WHEN I DO IT.

Whether it's the low body weight that's triggering the feelings of low energy and preoccupation with food, the low body fat percentage, or the energy deficit itself, I'm not sure. (Different physiologists have different theories on this, and I'm not sure anyone's pinned it down yet.) Whatever the reason, I'm not willing or able to live with the blahs and food hang-ups.

As a side note, these feelings of low energy and food preoccupation usually occur later in the day when I hit this magical low body weight/low calorie combination. It doesn't matter if I'm having a moderate calorie day, using a 16/8 feeding schedule, a 20/4 feeding schedule, or fasting for a full day. If it's not a high-calorie or high-carb day, my energy goes down significantly, starting around 4 PM. This lasts until the following morning. It's like I'm a video game character starting off with 10/10 on the power bar and by late evening there are only 3 bars left.

Of course, this happens because my body is conserving calories, which keeps me on the couch. Unless I force myself to get up and do stuff, I'm effectively neutralizing my negative energy balance.

Again, behold the power of human adaptability and our built-in survival mechanisms. If your body weight dips too low, or your negative energy balance is too extreme – even when you're exercising a lot and keeping your calorie intake in check – your body will adapt by decreasing your spontaneous activity. In other words, lying on the couch starts to look like the best possible option.

3 LESSON | I DO WHAT WORKS FOR ME.

Folks on the internet tend to be loud proponents of what worked for them, urging others to do the same exact thing in all situations, always, and forever. And it's tempting to buy into their confidence. However, after years of self-experimentation, I realize it's more important to discover what works for *me*.

Thus here's my plan for the future.

1. Stick with less frequent fasts and/or fasts of shorter duration.
2. Keep my energy intake in the 2500 calorie range until I start increasing my exercise volume, which is coming soon. (I start my track workouts shortly.) When my training time increases, energy intake will go up too.
3. Keep my body weight in the 173-175 range, just in case low body weight is triggering the discomfort I've been feeling in the 170-173 pound range.

Of course, none of this is set in stone. And that's the beauty of self-experimentation and outcome-based decision-making:

- **It empowers me to make *ONE small change at a time*;**
- ***measure* how that change works for at least two weeks, and then**
- **make *small subsequent changes as needed, one at a time, to keep moving toward my goals.***

That last part is important. If I expect that I'll reach my goals in two weeks, and then bail on the whole program because I don't, I probably deserve to fail. The only criterion for success is moving in the right direction... even painfully slowly.

Anything else is false expectation.

CHAPTER 7

Wrap-up, Results, and Lessons on Self-Experimentation

About 6 months from the start of my IF journey, after my last round of 16/8 fasts, I wrapped up these experiments, considering them a success.

For a quick visual recap of what I did (and when), see the following timeline:

MONTH #1	MONTH #2	MONTH #3	MONTH #4	MONTH #5	MONTH #6
1 full day fast		2 full day fasts	Daily 16/8 fasts	Daily 16/8 fast w/ 1 full day fast	Daily 16/8 fasts with 2 20/4 fasts
Body weight from 190-178 pounds		Bodyweight from 178-171 pounds	Bodyweight from 171-175 pounds	Bodyweight from 175-171 pounds	Bodyweight from 171-173 pounds

I consider this project a success because I accomplished the following:

- I lost 20 lb: I dropped my body weight from 190 pounds to 170 pounds.
- I lost 6% body fat: I dropped my body fat % from 10% to 4% (as measured via ultrasound device).
- I lost minimal lean mass.
- I maintained my weight in the 170-175 pound range for almost 4 months.
- I found at least two different IF protocols that I could probably follow indefinitely – the one day per week fast and the 16/8 fasting.

In the end, this is pretty cool because the only mid-term body weight and nutrition goals I have left to accomplish are to:

- Refine my eating approach to accommodate my upcoming track workouts
- Maintain my current body weight indefinitely

For those of you who prefer visuals, here are some before and after photos, documenting the changes I made:



BEFORE FRONT
AFTER FRONT

BEFORE FRONT FLEXED
AFTER FRONT FLEXED

BEFORE BACK
AFTER BACK



In addition, here's my before and after blood work (the most significant changes have been bolded):

BLOOD MARKER	PRE-EXPERIMENTATION	POST EXPERIMENTATION	REFERENCE RANGE
Glucose	5.0 mmol/L	4.9 mmol/L	3.6 – 6.0
Creatinine	103 umol/L	105 umol/L	62-115
eGFR	72 mL/min/1.73 m2	69 mL/min/1.73 m2	60-89
Cholesterol	3.78 mmol/L	5.0m mmol/L	<5.0
LDL	2.24 mmol/L	2.98 mmol/L	<3.36
HDL	1.15 mmol/L	1.64 mmol/L	>1.04
Cholesterol/HDL	3.3	3.1	<4
Triglycerides	0.86 mmol/L	0.95 mmol/L	<1.69
Hemoglobin	154 g/L	140 g/L	135-175
WBC	4.3 x E9/L	3.1 x E9/L	4-11
RBC	4.95 x E12/L	4.36 x E12/L	4.5-6.0
MCV	87.1 fL	91.3 fL	80-100
MCH	31.1 pg	32.1 pg	27.5-33.0
MCHC	357 g/L	352 g/L	305-360
RDW	12.2%	12.8%	11.5-14.5
NEUTS	1.3 x E9/L	1.1 x E9/L	2.0–7.5
LYMPH	2.2 x E9/L	1.5 x E9/L	1.0-3.5
MONO	0.6 x E9/L	0.4 x E9/L	0.2-1.0
EOS	0.2 x E9/L	0.1 x E9/L	0-0.5
BASO	0 x E9/L	0 E9/L	0-0.2
Platelet Count	169 x E9/L	150 x E9/L	150-400
Thyrotropin	1.62 mIU/L	1.21 mIU/L	0.35-5
Testosterone	28.9 nmol/L	23.8 nmol/L	8.4 – 28.7

There weren't large changes in my blood work, and I certainly didn't get dramatically "healthier" by following the IF protocols. However, there were some alterations worth mentioning.

BLOOD LIPIDS

As you can see in the table above, my total cholesterol, LDL cholesterol, HDL cholesterol, and triglycerides all *increased*. While some might suggest this is a result of the high meat and high fat/low carb intake – and that this increase is a problem – many well informed physicians and physiologists would suggest otherwise.

Well-respected naturopathic physician, Dr. Bryan Walsh, suggests that increased cholesterol levels – within certain limits – can actually be an indicator of better health;

especially when the cholesterol/HDL ratios are lowered and the triglyceride/HDL ratios decrease, as they both did during my experiments. In his words: “When it comes to blood lipids, I’d much rather have those after results than the before results.”

RED AND WHITE BLOOD CELLS

Moving in the opposite direction of my cholesterol levels, significant *decreases* in my haemoglobin, red blood cell, white blood cell, and platelet counts were observed. While this may indicate a nutrient deficiency (not good), it also could indicate a decrease in bone marrow cell production (due to the negative energy balance and the intermittent fasting) or even an increase in the efficiency of these cell lines (which could actually be a good thing).

Again, after talking with Dr. Walsh, we concluded that my chronic negative energy balance probably led to the decrease in cell production at the bone level. This probably contributed to some of the fatigue I experienced during my experiments. I’d be interested in measuring these values again after a few months of weight stability, a bit higher training volume, and a few more calories. Perhaps these will come back to my pre-testing values.

THYROID HORMONE AND TESTOSTERONE

Both thyroid hormones and testosterone are sensitive to energy balance. In other words, when energy balance is negative, these tend to drop. Therefore, I expected this small decrease in hormone levels. However, I’m not worried about the reductions since they’re very small.

In studies with more extreme energy deficits, testosterone and thyroid hormone levels drop to well below the reference range values. Since mine saw only small decreases, I didn’t suffer any testosterone or thyroid related problems, and I ended up preserving most of my muscle mass and strength while getting extremely lean. I’d say these drops aren’t anything to worry about.

To the contrary, according to Dr Walsh, with intermittent fasting, these reduced values could mean that I was becoming more efficient at using these hormones, reducing my requirement for their production. While this is pure speculation, there may be some merit to the idea. In fact, if intermittent fasting does contribute to increased lifespan/longevity, this potential increase in physiological efficiency may contribute to the effect.

What’s next?

At this point you’re probably wondering what’s next for me.

Will I continue intermittent fasting? Will I go back to more frequent meals? Will I try something else altogether?

Although I can’t say what I’ll be doing a few months from now – outcome-based decision making will determine that – here are some of the important ideas I’ll carry with me.

I’LL INCREASE MY CALORIE INTAKE WHEN TRACK WORKOUTS BEGIN.

Adding track workouts to my training schedule will change things quite a bit. Even though I’ll be starting off slowly with only 1-2 sessions per week, I’ll be burning quite a few more calories each week.

I'll need more recovery, because of the demand that track work puts on my central nervous system. So I'll definitely need to increase my food intake while incorporating additional recovery techniques. I'm not sure yet how many calories I'll add. That's where more self-experimentation will come into play.

I'LL KEEP CALORIE/CARB CYCLING.

Calorie and carb cycling is something I've done for a long time. In fact, I think most exercisers, regardless of their goals, should use some method of nutrient cycling.

So I'll continue eating more food (by increasing the carbs) 2-3 times per week after my hardest workouts and less food (by keeping carbs low) the other 4-5 days of the week.

Protein will stay high throughout.

I'm not sure yet how many days I'll "carb up." Again, I'll play around with a few different options and then make my decisions based on measured outcomes.

I'LL EAT MORE FOOD IMMEDIATELY AFTER HARD WORKOUTS AND LESS FOOD AS THE WORKOUT GETS FURTHER AWAY.

Nutrient timing – eating my largest meals after exercise – is something I've tried to do for a long time. However, I will say that this experiment forced me to get even better at it, and I think it made a difference.

I'm going to be very conscientious about eating my biggest meal of each day post-exercise, regardless of when that workout occurs, and decreasing the size of my meals the further I get from a workout. This includes keeping any pre-workout meals I might eat small.

I'LL STICK WITH A WHOLE FOOD APPROACH, LIMITING BARS, SHAKES, AND WORKOUT DRINKS.

Eating mostly whole, unprocessed food has always been high on my list of nutritional priorities. However, I must admit, there are times where I get supplement-crazy and allow too many "bars," "shakes," and "workout drinks" to displace real food choices.

For some of my hard-training Olympic and professional athletes, who train with high volume and intensity, these meal substitutes help them meet their energy needs or boost recovery. But neither I, nor most of my clients, need them.

Eating plenty of meat, veggies, and high quality carbs – along with a few simple supplements like vitamin D, a multi-vitamin, BCAAs, and some fish oil – is good enough. So that's probably what I'll stick with from now on.

I'LL EAT BREAKFAST ON SOME DAYS, BUT NOT OTHERS.

These experiments taught me that any meal is negotiable. I skipped all kinds of meals – breakfasts, lunches, dinners, and snacks – during these last 6 months.

And as long as I didn't pig out during my next meal and controlled my energy intake for the entire day, I didn't notice a big difference. Now I no longer believe that skipping a meal can have disastrous consequences. However, that doesn't mean I'm going to swing in the opposite direction and always skip meals.

I'll probably eat breakfast some days and skip it on other days. I'll probably choose based on how hungry I am, what activity I did the day before, and what my body weight has been doing for the last day or two. More fun with experimentation.

I'LL KEEP TRAINING AROUND NOON – SOMETIMES FASTED, SOMETIMES NOT.

In the past, I trained every evening after work. I've grown to prefer training around noon. It breaks up my work day nicely. I'll probably keep that up. On the days I skip breakfast, I'll probably train in a fasted state. And on days I eat breakfast, I won't.

Again, I'll use hunger, what I did the day before, and my current body weight to help me decide whether to train fasted.

I'LL FAST FOR A FULL DAY OCCASIONALLY.

When it's a rigid thing I have to do every Sunday, I don't love fasting all day. However, when it's an occasional thing, it's no problem.

So, I'll probably throw in a few full-day fasts each month, but they'll likely be random and unscheduled. Maybe I'll do one when I'm traveling all day. Or maybe I'll do one when I'm working on a project and don't want to be bothered to eat. Maybe I'll do one if I see my body weight creeping up. I'm not sure yet how I'll decide, but I'll experiment with a few options and see what works out best.

I'LL KEEP WEIGHING MYSELF DAILY.

Some people use the scale as a judge of their past decisions, which is why they're intimidated by it, and why it causes such crises of self-esteem. I don't use my scale that way. In fact, I loved weighing in every day during these experiments because my scale doesn't judge my past actions. Instead, it informs my future ones.

Every day my scale gives me important information about what to do next. That's why I'll keep weighing in every day. Body weight measures help me make key decisions about my food intake and training.

(Note: the scale works for me because body weight manipulation is an important goal of mine right now. Over time, body weight is a reflection of energy balance. However, if your goals are different from mine, you should choose different measures that better reflect what you want to accomplish.)

I'LL KEEP CONTROLLING MY APPETITE WITH PARTICULAR FOOD CHOICES.

Although body weight is largely determined by calorie balance, I learned that my food choices strongly affect my appetite and cravings.

If I fill up on proteins, large portions of veggies, legumes, and mixed nuts, I'm satisfied for hours and eat less each day. If I drink a protein shake or eat a protein bar, I'm hungry within an hour and tend to eat a little more during later meals. And if I eat fast food, I'm craving more within minutes and the day gets rough.

Thus, I'll continue to eat lean proteins, healthy fats, veggies, legumes, and unprocessed carbs most of the time. When my appetite is under control, I'm less likely to overeat. That means I'll control my intake and body weight better.

I'LL KEEP WRITING DOWN WHAT I EAT.

Take in more energy than you burn and you gain weight. Burn more energy than you take in and you lose weight. Duh.

But finding your own energy balance point can be a pretty tricky thing, especially as your body weight and exercise program change. Although I didn't try to count calories

during my experiment, having a journal helped me notice how much food I was eating day-to-day.

This meant that I'd have an actual reference point for eating more, less, or the same amount, based on what my body was doing. It also meant I could occasionally go back and tally up my calorie intake, just for the sake of curiosity.

I'LL TURN THESE EXPERIMENTS INTO A LARGER TRIAL.

These experiments have prompted me to do some additional IF experiments with larger numbers of men and women. In fact, as we wrapped this book, we started putting together a well-controlled IF study with 80 clients.

To stay-up-to-date on the results of that study and other research we're doing, put your name on our newsletter list on the Summary page.

Intermittent fasting: a success... *for me*

I've become a fan of periodic intermittent fasting, *for me*.

In particular, I liked the weekly fast (coupled with an "eat what I want" day). And I really benefited from the daily fast approach too.

For my clients? As always, each person is different.

Nutritional age (how much a person knows about nutrition, and how well they can apply that knowledge) plays a huge factor in my recommendations. I wouldn't give a Level 1 client (who's just learning the basics) the same advice I'd give to a Level 3 client like myself.

(For more on nutritional age, see the references section at the end of the book.)

My recommendations also depend heavily on lifestyle. In my own experiments, and in my work with clients, I've found that the dieting approaches outlined in this book are more successful when:

- you have a history of monitoring calorie and food intake (i.e. you've "dieted" before);
- you're already an experienced exerciser;
- you're single or you don't have children;
- your partner (if you have one) is extremely supportive; and,
- your job allows you to have periods of low performance while you adapt to a new plan.

On the other hand, these programs seem to be much more challenging for those who:

- are new to diet and exercise;
- are married and have children;
- have performance oriented or client-facing jobs; and,
- compete in sport/athletics.

In addition, women seem to fare worse on the stricter forms of intermittent fasting than men do; for women, I recommend beginning with a very relaxed approach to fasting or avoiding it altogether.

IF and adherence

Most IF advocates will suggest that their approach drastically improves adherence. They claim that having few, larger meals per day tends to help them stick to the plan better than having more frequent, smaller meals per day. I won't dispute that because they're probably right... *for them*. On the other hand, I hear a lot of people saying the exact opposite as well; that fasting triggers a binge response, and so on. And they're probably right too... *for them*.

I suspect, however, that rigid adherence to *any* schedule – whether it's a 4 meal per day schedule, a 6 meal per day schedule, a 16-hour fasting/8-hour feeding schedule, or a full day fast every Sunday – is what makes a lot of people drop out of any eating plan.

Indeed, whenever you tell folks what they *can't* do, they immediately obsess about it. Eventually that obsession becomes an all-out rebellion, leading to a “f*%! this” moment where you flip your diet the bird and soothe your fatigued willpower muscles with ice cream and self-pity.

As for me, I've gotten great results on dozens of different eating systems over the years, including grazing methods and fasting methods, so I'm happy to consider these IF techniques as simply an interesting addition to my list of “what works.” Nothing more.

That's why with my current goals, I'll probably keep doing some form of intermittent fasting. However, it'll be less structured, more random, and driven by outcome-based decision making, rather than rigid adherence to a pre-determined plan.

In essence, I'll be an intermittent faster on some days, a grazer on others, a low carb/high fat eater on some days, and a high carb/low fat eater on others. Of course, *what* I'm doing isn't as important as *how* I'm doing. So I'll make sure my weekly calorie balance is on track and that my body weight is in check.

I'm not sure what this approach makes me or what nutritional camp I fall into. Regardless, I strive to be as open-minded and evidence-based as possible. I do these self-experiments because I want to look, feel, and perform my best.

Interestingly, as I get older, my definitions of “best” change as do the techniques I employ to achieve this “best.” I'm also learning that the only way to improve is to try new things, measure what happens when I do, and then change things when they need to be changed.

Self experimentation: Try this at home!

If you haven't guessed it by now, this book isn't about what I think *you* should do with your diet and exercise program. (Although if you read between the lines you'll probably pick up some great pointers.) Rather, this book is about what *I* did with *my* diet and exercise program over the last few months.

If you want to know where to start, I recommend you check out the free 5-day courses I link to in the resources section at the end of this book. They'll give you a great baseline of habits to follow.

But even these habits aren't immutable. They're a great foundation for improving your body weight, body composition, health, and energy levels, but you'll eventually want to experiment on yourself. I wholly support that.

I've found self-experiments to be great for many reasons. For instance:

SELF-EXPERIMENTS INSPIRE ACTION.

Self-experiments get you started *now*.

Instead of action-less reading, theorizing, and debating – which can paralyze even the best of us – you can try new things right away, as soon as you learn about them or they occur to you.

If they work, that's great. You just added another effective strategy to your approach. If they don't work, that's great too. Not only did you eliminate an ineffective strategy, you practiced the most important habit you can develop: your ability to take *action*.

SELF-EXPERIMENTS CREATE SELF-AWARENESS.

In coaching thousands of clients, I've learned that a client's best friend is self-awareness – *paying attention*.

When people stop paying attention in their lives, they don't think clearly, act independently, or make positive changes. They become automatons who mindlessly react to life circumstances.

Self-awareness and self-control grow through the deliberate process of self-experimentation. These skills can lead to powerful life changes.

SELF-EXPERIMENTS GIVE US CONFIDENCE.

In our culture, we idolize experts. We're trained to expect them to make important decisions for us.

Although this is good sometimes, this also strips us of our power to think and decide. It's a power we *all* have, and one that we must practice. By allowing us to make small, low-risk decisions, and to test the results of these decisions, self-experiments turn us into scientists.

They turn us into experts on the one thing most important to us: *ourselves*.

SELF-EXPERIMENTS HELP US START SMALL.

We often make new habits and procedures far too big and, therefore, unsustainable. Then we fail to accomplish important goals.

Self-experiments are powerful because they force us to narrow our scope. Scientists design their experiments by changing only one thing at a time, while other variables remain the same.

Modelling this behaviour drastically increases the likelihood that we'll learn something important about ourselves *and* achieve our goals.

SELF-EXPERIMENTS KEEP US MOVING FORWARD.

I recently did a survey of my staff, all folks who've exercised and eaten well for years. I asked them what helps them keep exercising when people all around them quit. They told me that trying new exercise programs and nutrition ideas is a regular part of their lives.

Of course, they're not just jumping around randomly, changing programs with the prevailing winds. Rather, they use a systematic approach and the best practices of self-experimentation.

All across the internet, there's a self-experimentation movement going on with a few key websites leading the charge. With this movement, budding self-scientists use small single-subject experiments to generate, test, and develop new ideas that might later lead to important scientific discoveries.

People are doing one-person sleep experiments, brain imaging experiments, nutrition experiments, acne experiments, and experiments with psychoactive drugs.

While that's all really cool, it's not exactly what I mean here. Rather, I mean developing a strategy exclusively for *you*. A strategy that'll help you gather confidence, gain personal expertise, and find what really works in your life – all the while learning, practicing, taking action, and having fun..

How to do your own self experiments

How do you do your own self-experiments? The steps are pretty simple.

STEP

1

DEFINE YOUR GOAL.

What do you want to achieve? Do you want to lose body fat? Gain lean mass? Lower your cholesterol? Lift more weight? Have more energy between the hours of 4 PM and 9 PM?

Take time to figure out what – *exactly* – you want to accomplish.

(This is easier said than done. While some people say they want to lose weight, that's not *really* what they want. Sometimes it takes a little deeper introspection to understand what they truly seek.)

If you have a hard time narrowing down your many goals, edit ruthlessly. Figure out your *most important one*. With my IF experiments, I had several goals, but my most important one was to lose body weight. That's what I focused on and defined success by.

STEP

2

DECIDE WHAT YOU'LL MEASURE AND WHEN YOU'LL MEASURE IT.

You'll need to measure something to know if your experiment is working. You could use an already established measure, or you could make something up. I wanted to lose body weight, so I bought a good, calibrated weigh scale and measured my weight every day.

Some other goals might not have such clearly established measures. For example, if you want to improve your energy later in the day, you can't just drop by the local pharmacy to pick up an "energy scale." So you'll have to come up with something on your own. Maybe you could create a 10-point scale with 0 being no energy and 10 being the most energy you've ever felt. Then you could rank your energy every day at the same critical time, by placing an X on the area of the scale that best represents how you feel.

Regardless of the measure you choose, it's important to *start small* and *measure as few variables as possible*. One or two outcome measures is perfect. Try to track more during the same experiment and you'll either get overwhelmed or confused.

STEP 3 | COLLECT A BASELINE.

Now that you have a goal and an established metric, it's time to collect a little data. I suggest about 2 weeks' worth.

You see, every metric has variability – body weight, intelligence scores, strength, speed, happiness, etc. In other words, if you do 100 measures over 100 days, even without any substantial changes in your life, the measures would vary by a few percent. We can't always pin down why; they just do.

That's why you'll need to collect at least 14 days worth of data before testing your first idea. This way you'll know what your baseline and normal variability is, and you can understand what the day-to-day variations mean during your testing period.

In my experiment, I had a suitable baseline because I already measured myself every day and knew the normal day-to-day variability. Thus, I'd know that if larger changes were happening, they were the result of my experiment.

STEP 4 | TEST YOUR IDEAS.

Now, begin testing.

Will you try a new dietary supplement? Will you try removing a food from your diet? Will you add a new type of exercise?

Whatever you choose, stay with the “power of less” approach and make sure your manipulation is small and simple. I recommend this for a few reasons.

First, it'll help you understand what's going on. If you try testing four nutritional supplements at once, you won't be able to draw conclusions about whether any particular supplement is working (or not working). Likewise, if you try an entirely new diet, you won't know if it's the change in food type, amount, or schedule that made the difference.

Second, a small, simple intervention ensures that you can actually complete the experiment. I hate to keep harping on this, but if you go too big, it'll probably be more than you can handle, and you'll quit. So stay small. *Change only one variable at a time*. And make sure the manipulation you choose is something *sure* you can do *every day*.

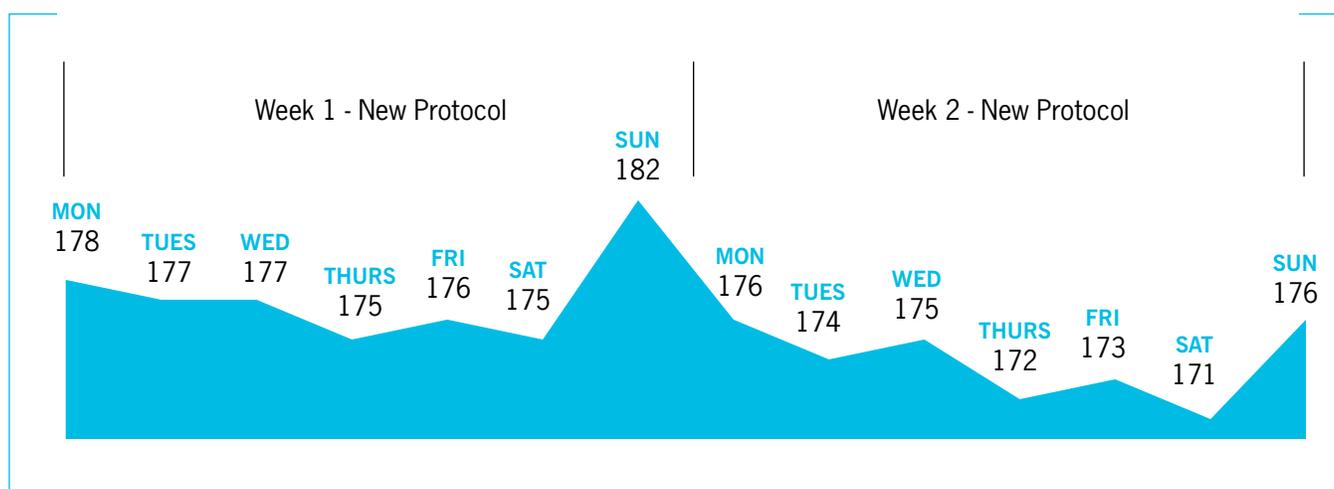
In my experiments, you may recall that I kept my training consistent throughout. On the nutrition side, I typically kept weekly calorie intake the same, manipulating only one variable – when I fasted.

STEP 5

FOLLOW YOUR NEW PLAN FOR AT LEAST 14 DAYS.

For the same reasons you collected two weeks' worth of baseline information, follow your new plan for at least two weeks. That's often enough to give your program a chance to produce a measurable result. Further, it'll help you stick to the program even when the day-to-day variability starts freaking you out.

To illustrate my point, here's a sample 2-week block of body weight data from one phase of my experiments:



Notice that the two week trend indicates successful weight loss. (Remember, my reference day was Friday.) However, if you just looked at the day-to-day variation, you wouldn't know if the protocol was working.

As an example, check out week 1. It looks like I'm losing weight in a nice, steady way and then on Friday and Sunday my weight jumps, with Sunday's weight being higher than at the start of the week. Pretty much the same for week two.

Of course, if I didn't understand how day-to-day variability worked I might have panicked, and perhaps done something drastic. Fortunately, I had the data and simply kept going.

Follow your plan despite the ups and downs you'll see in your measurement data. In other words, don't freak out. If your two week data show that you're moving in the right direction, even if the changes are small, that's great news.

STEP**6****IF IT'S WORKING, KEEP GOING.**

If what you're doing is working – and by working I mean that you're moving in the direction of your goals – simply keep doing it. Even if it “feels slow.”

When you're chasing an important goal, it *always* feels slow, and you'll always consider trying something more drastic. Don't do it. You'll either get physically or mentally overwhelmed and either one will lead to a crash.

In my very first fasting experiment, the program consistently brought me in the direction of my goals, so I kept doing it – for four blocks of two weeks each. You'll notice the same pattern throughout.

If the program was working, I kept going.

STEP**7****IF IT'S NOT WORKING, MAKE SMALL CHANGES.**

If after two weeks the plan doesn't lead to any positive changes or, worse yet, produced negative changes, it's time to try something new. But don't forget the rules. Make sure the change is small, that you keep the other variables consistent, and that you choose something you're sure you can do every day.

Again, using my experiments as an example, I ended my first fasting experiment, planning something new, after two weeks of no additional weight loss. You'll notice the same pattern throughout.

If I didn't move toward my goals – or I moved away from them – I made a change.

STEP**8****WORK WITH A COACH.**

If you're feeling intimidated by the process, at any time, work with a coach. An experienced coach will be able to help you better set goals, decide upon metrics, and evaluate your results.

This effectively turns “self-experimentation” into “guided experimentation,” something many of us need from time to time.

STEP**9****REPEAT UNTIL YOU REACH YOUR GOAL.**

This process is awesome because it's based on the outcomes most important to you – your own data.

You can use it to continually learn new things about yourself. There's always a next step and never a dead end, since there are thousands of manipulations you can try.

I reached my body weight goals through the process outlined in this book. However, things are about to change. I'll be adding more training, and I'll need to manipulate my diet to accommodate this.

In addition, I'll still be experimenting to find the perfect balance of body weight, calorie intake, and body fat to help me feel my best while staying lean and in the 170 pound weight range. Dozens of self-experiments right there. I can't wait.

This is a simple, powerful process. Apply it to all aspects of your life (one small piece at a time), and you'll accomplish amazing things.

But beyond the results, *you'll start feeling in control* – of your decisions and your ability to revise and refine your own life.

As Jews often say to one another before Yom Kippur, *tzom kal*: May you have an easy fast.

APPENDIX A

How To Do Intermittent Fasting: Cheat Sheet with Our 3 Favorite Protocols

So you've gone through the book, read every word (right?), and decided you want to try intermittent fasting. Good for you. But which style should you choose? We outline our suggestions below.

1. The Trial Fast

WHAT IT IS

Simple, you *try* it out. The Trial Fast is what we have our own Lean Eating clients do: try going without food for 24 hours.

WHY DO IT

To experience hunger *intentionally* in order to get accustomed to the feeling, and, well... not freak out. The ability to manage hunger is essential to fitness and good health, and this is a great way to get better at it. (Check out more benefits of the trial fast in the Introduction.)

WHO IT'S FOR

The Trial Fast is for anyone who wants to try fasting without committing to it full-time. It's also an excellent way to see if more advanced forms of fasting will be right for you.

Get a little spacey during your trial fast? A little irritated at people? Well, those are actually common responses. Nothing to worry about. Want to put your head through a wall or yell at everyone who enters the room? That could be a problem. But you'll never know until you try.

HOW TO DO IT

Essentially, you pick any 24-hour period, and don't eat during it. But we like to add a few things to make it easier. Here, we'll assume a Sunday fast:

10 PM Saturday:

- Eat your last meal of the day
- Drink 500 mL (2 cups) of water

10 AM Sunday:

- Drink 1 L (4 cups) of water + 1 serving greens powder
- Drink 250 mL (1 cup) of green tea
- Take 5 grams BCAA (branched chain amino acids) powder (or take 5 capsules)

3 PM Sunday:

- Drink 1 L (4 cups) of water + 1 serving greens powder
- Drink 250 mL (1 cup) green tea
- Take 5 grams BCAA (branched chain amino acids) powder (or take 5 capsules)

10 PM Sunday:

- Eat a small snack before bed
- Drink 500 mL (2 cups) of water

Monday:

- Eat normally

Tips and Strategies for the Trial Fast

- The tea, greens, and BCAAs aren't essential to fasting, but in our experience, they make it a lot easier.
- Drinking water in particular helps to mitigate feelings of hunger.
- Be aware of your body cues. Feeling stressed out or “upset” during your fast? Relax. Take a few deep breaths, and pay close attention — this is what hunger can feel like. The more you know about the feeling, the easier it is to manage in the future.

Have healthy food (lean meats, veggies, etc.) in the house and ready to go when you “break” the fast on Sunday night with a small meal. We suggest a tablespoon of almond butter and some celery. Also, having healthy food in the house is good insurance that you won't binge on Monday when you return to normal eating.

2. The Periodic Fast

WHAT IT IS

The Periodic Fast is exactly what it sounds like: you fast periodically. So while you should still eat well (high protein, lots of veggies, a balance of fats, and a moderate intake of minimally processed carbohydrates) you'd periodically take a full day to fast (just like the Trial Fast).

You can do this once a year, once a month, once a week — whatever works for you. But we recommend no more frequently than once a week; as you can read in Chapter 5, twice a week proved disastrous. Fair warning.

WHY DO IT

To further practice hunger management and experience more of the potential health and fat loss benefits of intermittent fasting.

WHO IT'S FOR

The Periodic Fast is for anyone who responded well to the Trial Fast.

HOW TO DO IT

The Periodic Fast is flexible: you can choose whichever 24 hours you want. Want to fast from breakfast to breakfast? That's cool. Just eat breakfast on Monday, and don't eat again until breakfast on Tuesday. Want to fast dinner to dinner? That's cool too. Eat dinner on Wednesday, and don't eat again until dinner on Thursday.

To do it, simply follow the rules above from the "Trial Fast".

Tips and Strategies:

- I like to do the Periodic Fast when traveling. When I'm in and out of airports and good food is hard to come by, I'll throw in a full-day fast when it makes sense. Other people find that travel stresses them out, and fasting may exacerbate that feeling. You may prefer to pick the least stressful day in your week or month and start with that.

3. The Daily Fast

WHAT IT IS

The Daily Fast is an 8-hour feeding period followed by a 16-hour fast.

WHY DO IT

To pursue extreme leanness.

WHO IT'S FOR

The Daily Fast is best for people who are already fit, have plenty of experience eating healthy and want to be extremely lean.

Men generally respond best to the 16-hour fast, 8-hour eating split; women seem to need a longer eating window and shorter fast (try a 14-hour fast with an 10-hour eating window) or a more relaxed approach in general. But it can work for both men and women as long as they have good self-discipline and don't have a history of eating disorders.

WHO IT'S NOT FOR

Pregnant women, people who have or have had eating disorders, and people simply looking to be healthy and fit with no particular desire to be extremely lean. The Daily Fast will typically be much harder to adhere to for men over 15% body fat and women over 22% body fat. Furthermore, there are far easier ways to make rapid and lasting change for people in those categories. See "How to get in shape without fasting" below.

HOW TO DO IT

The Daily Fast is outlined in more detail in Chapter 6.

The basic principle? You eat during an 8-hour feeding period and fast during a 16-hour fasting period. But there are other key principles as well:

- **High protein & vegetable intake:** During the 8-hour eating window, eat a ton of protein (meat, poultry, fish) and vegetables (think green growing things). Err on the side of eating too much of these foods.
- **Fasted training:** Do intense resistance training 3 times per week, right before you eat your first meal. In other words, you'll be training on an empty stomach.
- **Carb cycling:** On training days, add carbs (quinoa, rice, whole grain bread, fruit, etc.) to your base diet of protein and veggies.
- **Nutrient timing:** On training days, eat as much of your food as soon after training as possible. Your biggest meal should come right after your workout.

Most people who follow this protocol fast from 9 PM until 1PM the next day, exercising around noon while consuming 10 grams of BCAAs (branched chain amino acids) during training.

After training, eat 2-3 large meals before 9 PM, with your biggest meal coming right after exercise.

(Note: If you can't get away for a workout in the middle of the day, there are other ways to set this up. Also, this protocol is more strict and therefore suited for more advanced trainees. Not for newbies.)

Sample Single-Day Schedule

- 8:00 AM Wake up, drink 500 mL (2 cups) water
- 9:00 AM Drink 1 L (4 cups) water with 1 serving greens+, 250 mL (1 cup) green tea
- 11:00 AM 250 mL (1 cup) green tea
- 12:00 PM Workout session with 10 g BCAA during session
- 1:30 PM Eat first meal, largest of the day
- 4:30 PM Eat second meal, moderate sized meal
- 8:30 PM Eat third meal, moderate sized meal

Tips and Strategies

- Don't fool yourself into thinking you can just skip breakfast and get shredded; what makes it work is combination of all the principles at play, including the food selection, fasted training and nutrient timing. This is an advanced strategy, not a magic bullet.
- Even if you think you can do the Daily Fast, consider choosing the Trial or Periodic Fast first.
- Make sure to re-read Chapter 6 for a full outline on how to perform the fast safely and effectively.

- If you find eating this way is too strict, try a) extending the eating window from 8 hours to 9 or even 10 hours, or b) turning your hardest training day into an “eat what you want” day to relax things a little. Or try two “eat what you want” days. These aren’t rules, just guidelines; better to follow a more relaxed plan than abandon a stricter one.

Not a fit for you? Here’s how to get in shape *without* fasting

So how does intermittent fasting fit in? In three ways.

First, it’s a great way to intentionally practice being hungry. The better you can manage hunger, the less likely you are to react compulsively to it. To get fit — and stay fit — you need that skill.

Second, it’s a lesson in disguise for people who care about their health and fitness: *relax*. So you missed a meal. Who cares? Might even be good for you. Just keep going.

Third, it’s great as an advanced strategy for extreme leanness. If you want that, and you’re prepared, you may find this protocol easier to follow than the typical bodybuilding-style diets. I did.

But ultimately, fasting is a “nice-to-have.” It’s unnecessary to get in shape, and alone it’s insufficient.

You know what’s both necessary *and* sufficient? Things like eating good quality food in the right amounts at the right times. Things like learning to prepare healthy food in the first place. Those things are enough for most people to get in the best shape of their lives. I know, because my team and I have helped thousands of clients get there; none of them did any more than the Trial Fast, but *all* of them are taught those essentials.

So if you’re looking at all this intermittent fasting stuff and aren’t sure where it fits in for you, what should you do?

Learn the essentials of good nutrition. It’s by far the best thing you can do for your health and fitness.

APPENDIX B

Intermittent Fasting Tips & Tricks

Here's a quick overview of some of the key concepts of IF and what to keep in mind if you want to try it.

1. FIRST, DECIDE IF IT'S RIGHT FOR YOU.

Although there are some neat benefits, IF is not for everyone. Your exercise and nutritional experience, and your lifestyle, should determine whether you try IF. If you're new to exercise and nutrition, I strongly recommend you learn the essentials first.

2. START SLOWLY. START SIMPLY. START SMALL. START GRADUALLY.

If you decide you'd like to try IF, there's no rush. Pick one small thing to try, even if that's just adjusting regular mealtimes by an hour. Try it. See how it goes.

3. FOCUS ON WHAT IF APPROACHES HAVE IN COMMON, RATHER THAN GETTING BOGGED DOWN IN THE DETAILS.

Sometimes you eat. Sometimes you don't. That pretty much sums it up.

4. STAY FLEXIBLE.

See #3.

5. KNOW THYSELF. OBSERVE YOUR OWN EXPERIENCES CAREFULLY.

Be a scientist. Get started, gather data, gain insight, and draw conclusions that you use to guide future action. Do what's right for you.

6. GIVE IT TIME.

There is no rush. Especially since it usually takes a few weeks just to adapt to your new program.

7. EXPECT UPS AND DOWNS.

They happen, it's part of life, and it's part of the process. By staying open-minded and not panicking during the "downs" you'll figure out how to have more "ups."

8. THINK ABOUT WHAT YOU TRULY WANT FROM IF. FOCUS ON THE QUALITY OF THE PROCESS, NOT THE OUTCOME.

IF is a great way to:

- go deeper into the psychological and physical experience of true hunger;
- learn the difference between “head hunger” and “body hunger;”
- learn not to fear hunger;
- improve insulin sensitivity and re-calibrate your body’s use of stored fuel;
- respect the process and privilege of eating;
- learn more about your own body;
- lose fat, if you are careful about it; and,
- take a break from the work of food prep and the obligation to eat.

IF is not healthy if:

- you’re using the pretext of “health” as a way to have an eating disorder and/or rigidly control your food intake (which is really the same thing);
- you fast too often, too long;
- you’re also overexercising or not getting enough sleep (i.e., under too much additional physiological stress);
- you’re using a lot of supplements, legal or otherwise, to kill your appetite so you can make it through your fasts;
- you’re food-obsessed and/or binge during your non-fasting periods; and,
- you use IF as a way to “compensate” for poor food choices or over-eating.

9. WHAT YOU DO EAT IS AS IMPORTANT AS WHAT YOU DON’T.

Get the nutritional basics down first. Eat good quality food, in the right amounts, at the right times. For most people, this is enough to get into great shape. No IF required.

For more on this, see our 5-Day Fat Loss course, in the Resources section.

10. RESPECT YOUR BODY CUES.

Pay attention to what your body tells you.

This includes:

- drastic changes in appetite, hunger, and satiety – including food cravings;
- sleep quality;
- energy levels and athletic performance;
- mood and mental/emotional health;
- immunity;
- blood profile;
- hormonal health; and,
- how you look.

11. EXERCISE, BUT DON'T OVERDO IT.

We strongly recommend you combine exercise with IF to get the most out of it. Just don't overdo it. See #12.

12. CONSIDER WHAT ELSE IS GOING ON IN YOUR LIFE.

Think about:

- how much exercise/training you do, and how intensely;
- how well you rest and recover;
- how well IF is fitting into your regular routine and normal social activities; and,
- what other demands and stress life offers you.

Remember: IF is one of many nutrition styles that work. But it only “works” when it's intermittent, flexible, and part of your normal routine – not an obligation, and not a chronic source of physical and psychological stress.

Resources

Last I checked, there were over 63,000 diet books and 97,000 exercise books indexed at Amazon.com. I don't know about you, but that feels like way too many.

Here are some of my favourite books, websites, and resources to help you narrow things down. If you're looking for more on the topics of exercise, nutrition, fitness, and self-experimentation, these provide a great starting point.

Our websites

Precision Nutrition – This is my own company's website. It's a huge resource full of free exercise, nutrition, and lifestyle information. With over 500 free articles and a popular, friendly, supportive discussion community, it may be the only fitness and nutrition site you ever need to visit.

Stumptuous – The premier women's weight-lifting site on the web, hosted by co-author Dr. Krista Scott-Dixon. This site is free of advertising and sponsorship and is devoted 100% to promoting and supporting no-nonsense exercise habits for women. In other words, no pink dumbbells allowed.

The Nate Green Experience – A cool lifestyle blog in which co-author Nate Green explores what it means to be a young guy trying to find his way around the gym – and around the world – all while becoming his own hero.

Resources referenced in the text

5-Day Fat Loss Course For Men (Free) and 5-Day Fat Loss Course For Women (Free) – These free 5-day video courses for men and women, respectively, cover the best practices of exercise, nutrition, and lifestyle for improving your health and getting into great shape. Brief and concise, yet probably the best fat-loss quick-start guide you'll ever find, complete with printable habits, recipes, and workout routines.

Act Your Nutritional Age – This article covers the topic of nutritional age, and why we recommend different starting points based on different nutritional ages.

Brad Pilon and Eat Stop Eat – Brad Pilon's web site, home of his Eat Stop Eat intermittent fasting system. Brad recently updated the book, and it's worth checking out if you're interested in IF.

Intermittent Fasting Research Review – This is an excellent review (although it's a few years old now) of what the scientific community knows about intermittent fasting.

Lean Eating Coaching for Men and Lean Eating Coaching for Women – The very successful men's and women's fat-loss coaching program we run each year. We provide

expert coaches to small groups of motivated clients, and we guarantee their results. Plus, there's \$50,000 in prize money for the best transformations in the group.

Leangains – Mentioned in Chapter 6, this is Martin Berkhan's web site, home of his Leangains intermittent fasting system, one of the protocols I did quite well on.

Results Fitness – Home of Alwyn Cosgrove's gym (in Santa Clarita, California), voted one of the top 10 gyms in America by Men's Health magazine. Alwyn is a good friend and often acts as one of my sounding boards for new nutrition and fitness ideas. Plus, his gym is a testing ground for many of our nutritional theories.

The Power of Less – An outstanding book describing author Leo Babauta's analysis of his own growth and change. If you want to understand how change happens and how new habits are actually formed in the real world, there isn't a better book than this one.

The Warrior Diet – Ori Hofmekler's web site, home to his Warrior Diet intermittent fasting system.

The Get Shredded Diet – A more extreme, bodybuilding-style fat loss plan designed to be followed for short periods of time when trying to get very lean. It's highly effective, but not suitable for everyone.

The Getting Unshredded Plan – When ending "The Get Shredded Diet," it's quite common to overeat and experience rebound weight gain. That's why it's best to use the strategies outlined in this article when ending an extreme bodybuilding-style diet.

Wikipedia: Alternate Day Fasting – Alternate Day Fasting is reviewed here on Wikipedia, complete with short reviews of both the animal and the human studies.

Self-experimentation resources

Self-Experimentation As A Source of New Ideas – Seth Roberts' review, in the *Journal of Behavioral and Brain Sciences*, on the art of self-experimentation. Roberts reports on 10 different self-experiments he's done and the surprising things he found.

The 4 Hour Body – Tim Ferriss' song of praise for the art of self-experimentation. With hundreds of experiments, this book covers Ferriss' research into fat loss, muscle gain, sleep quality, sexual prowess, muscle performance, and much more.

Quantified Self – A web site for people interested in self-tracking. Here you can gather with other self-trackers, share knowledge and experiences, and find tons of self-experimentation related resources. A great jumping-off point if you're interested in doing more self-experiments.

Nutrition coaching resources

The Essentials of Sport and Exercise Nutrition – As an author of this book, I'm obviously biased. But I have to say it: If you work with clients in the area of exercise and nutrition, this is a book you need to read. Ryan Andrews and I produced this 500-page academic textbook because, frankly, nothing like it existed. There are over a dozen different fields of study involved in body transformation, from molecular biology, to food science, to behavioural psychology (to name just a few). I've spent most of my academic and professional careers trying to synthesize as many of those fields and ideas as possible. This text is the result, and it's the text I wish I'd had when I started my own training.

About The Authors

About Dr John Berardi

For the last 3 years, Dr. Berardi has been the director of the world's largest body transformation project. This one-of-a-kind fat loss coaching program has produced over 120,000 pounds of fat loss.

Dr. Berardi has also coached hundreds of elite amateur and professional athletes. In the last two Winter Olympics alone, his athletes collected over 25 medals, 12 of them gold. He also serves as a high performance consultant for Nike.

In addition to the athletes and recreational exercisers he coaches, Dr. Berardi recently created a mentorship program for fitness, strength, and nutrition professionals. This "train the trainers" program has become widely regarded as the industry's top nutrition mentorship.

For more about Dr. Berardi and his work, visit www.precisionnutrition.com.

About Dr Krista Scott-Dixon

A former university researcher and teacher in the field of gender, work, and public health, Dr. Scott-Dixon now serves as the research director for the Healthy Food Bank foundation and the editor-in-chief of *Spezzatino* magazine – the food magazine that really feeds people.

Dr. Scott-Dixon has coached three cohorts of Precision Nutrition's Lean Eating coaching program, and now designs and develops both the men's and women's body transformation programs.

Passionate about women's fitness since her own body transformation in the mid-1990s, Dr. Scott-Dixon has run the extremely popular women's weight training and nutrition site – www.stumptuous.com – since 1997.

About Nate Green

Nate Green is the author of *Built for Show* and *The Hero Handbook* and has been featured in the *LA Times*, *Men's Health*, and *Men's Fitness*.

He's had over 100 articles published in print and online magazines and currently serves as a "master storyteller" for Precision Nutrition. In this role, he profiles clients who've undergone major transformations, writes exercise and nutrition articles, and supervises the lesson and habit development for the Precision Nutrition Scrawny to Brawny coaching program.

He blogs about working out, nutrition, lifestyle hacks, and other cool things at: www.thenategreenexperience.com.