

TODAY'S "HOT TOPICS"

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THE BEST  
STRATEGIES FOR  
**CALORIE  
CONTROL**

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Precision Nutrition

TODAY'S "HOT TOPICS"

# THE BEST STRATEGIES FOR CALORIE CONTROL

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# THE SURPRISING PROBLEM WITH CALORIE COUNTING

## Part 1: 'Calories In'

By John Berardi Ph.D. and Helen Kollias Ph.D.

Most people who count calories for weight loss or weight management assume it's an exact science. It's not. Here we outline 5 reasons calorie counting (i.e. logging your food to calculate intake) is fundamentally flawed.

# Make no mistake, the principles of energy balance work:

*Take in more calories / energy than you expend, you gain weight.  
Take in fewer calories / energy than you expend, you lose weight.*

However, *counting* calories as a way to try to know, and control, your energy intake is fundamentally — sometimes hopelessly — flawed.

For starters, you can't really trust that the calorie (and macronutrient) numbers you see on food packages are accurate. You see, the way they're calculated — if they're calculated at all — is surprisingly imprecise.

Plus, even if food package numbers were precise, once the food is cooked, or chopped, or blended, the amount of energy available for digestion and absorption changes.

Then there's what happens once that food enters your body...

In the end, even something that seems as simple as knowing how many calories you're taking in (and absorbing) can be influenced by dozens of unexpected factors.

That's why, today, we share the 5 biggest (and surprising) problems with calorie counting as it relates to the "calories in" side of the energy balance equation.



# THE SURPRISING PROBLEM WITH CALORIE COUNTING

## PART 1: 'CALORIES IN'

Most people who count calories for weight management assume it's an exact science. Here, 5 reasons why tracking the calories in your food is a flawed approach.

# 1

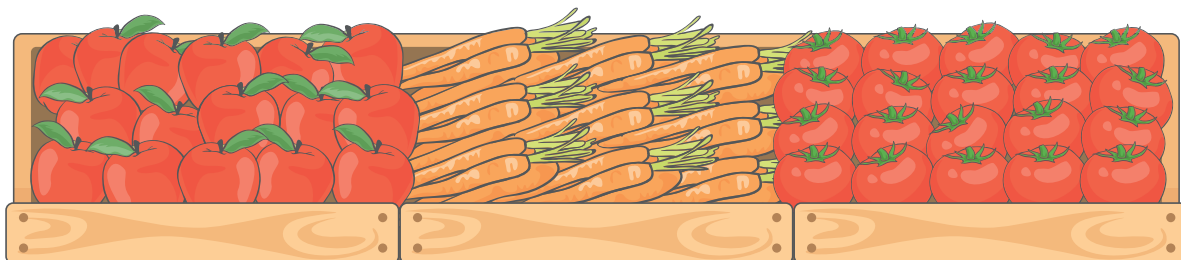
### CALORIE COUNTS ARE IMPRECISE.

The calorie counts on food labels and in databases are averages. Research shows that the true calorie content of what you're eating is often significantly higher or lower.

#### APPLES

#### CARROTS

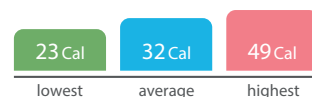
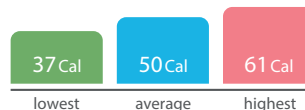
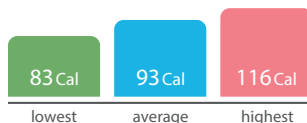
#### TOMATOES



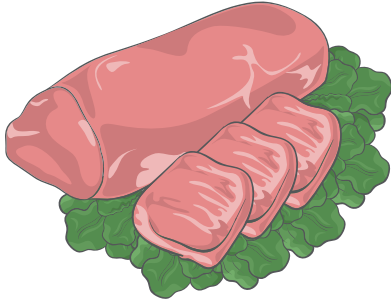
1 medium apple

1 cup carrot sticks

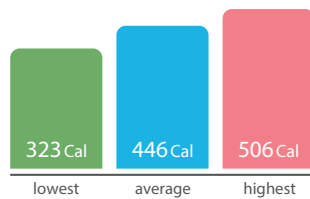
1 cup chopped tomato



## LEAN BEEF LOIN



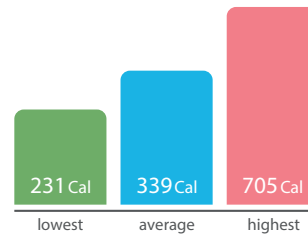
1 6-oz filet mignon



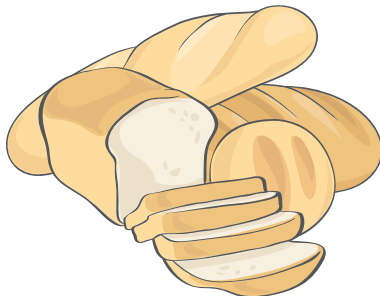
## SWEET POTATO



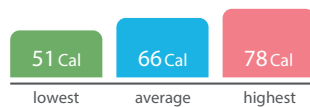
1 large sweet potato



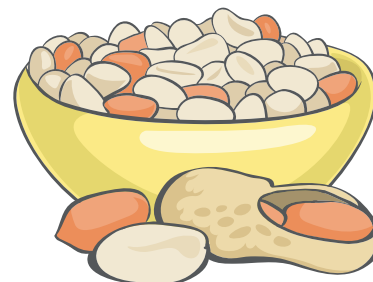
## WHITE BREAD



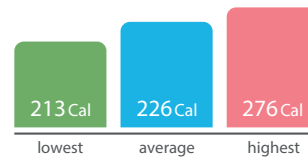
1 slice of bread



## PEANUTS



1/3 cup chopped peanuts







Food companies may use any of 5 different methods to estimate calories, so the FDA permits inaccuracies of up to 20%.

So "150 calories" actually means 130-180 calories.

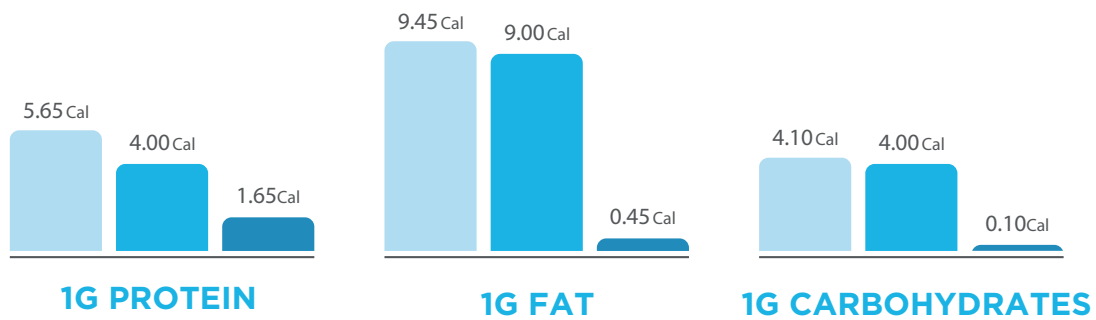
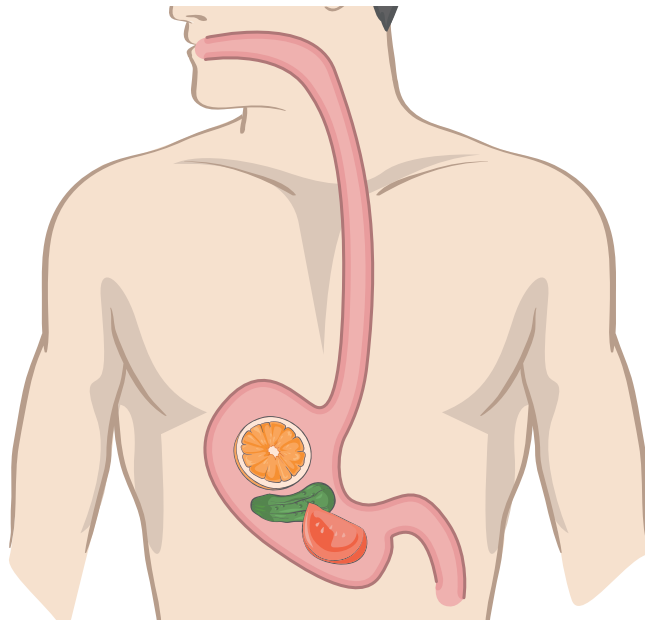
**ERROR: UP TO 50%**

# 2

## WE DON'T ABSORB ALL OF THE CALORIES WE CONSUME.

For decades, scientists have used this formula to come up with calorie counts that reflect only what we'll absorb:

Some calories pass through us undigested, and this varies from food to food.

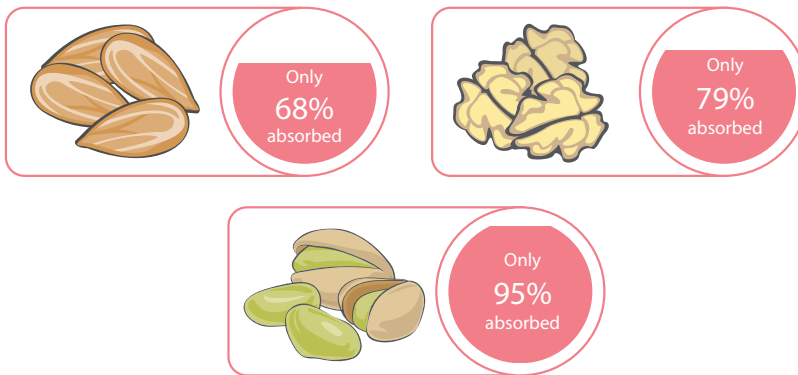


- TOTAL CALORIES PER 1 GRAM OF MACRONUTRIENT
- CALORIES AVAILABLE FOR ABSORPTION
- CALORIES NOT ABSORBED

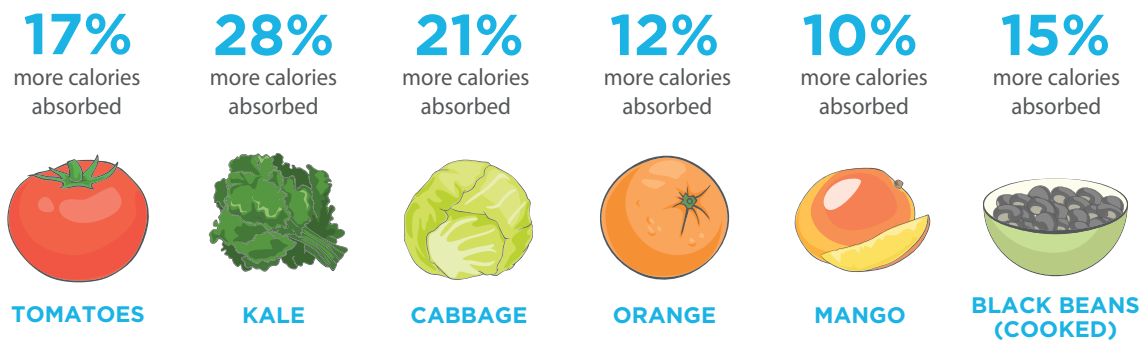


## BUT THIS FORMULA DOESN'T TELL THE WHOLE STORY, EITHER.

For example, the formula doesn't work for nuts and seeds, because we absorb fewer calories from them than calculated.



Another example: The formula is wrong about fiber-rich foods.



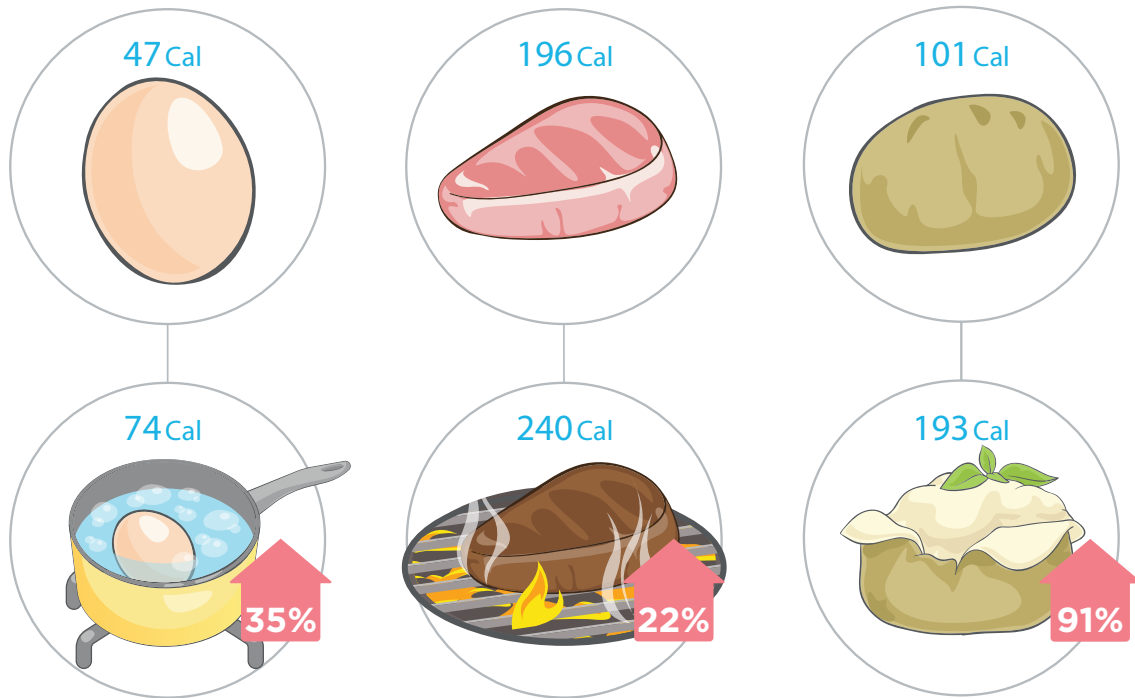
And another example: It turns out that the number of calories available for absorption from protein-rich foods is much more variable than the formula calculates.

**ERROR: 10% ON AVERAGE**

# 3

## HOW YOU PREPARE FOOD CHANGES ITS CALORIE LOAD.

Cooking your food generally makes more of the calories available for absorption, and food labels don't always reflect that.



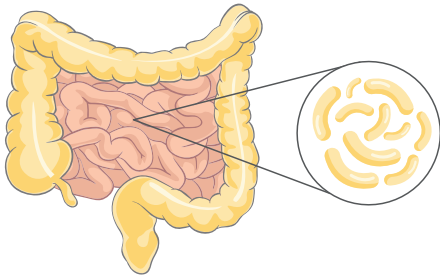
CHOPPING OR BLENDING YOUR FOOD ALSO INCREASES CALORIES ABSORBED.

**ERROR: UP TO 90%**



# 4

## INDIVIDUALS ABSORB CALORIES UNIQUELY (AND VARIABLY).



Our own individual gut bacteria can increase or decrease the calories we absorb.

People with a higher proportion of Firmicutes bacteria absorb an average of

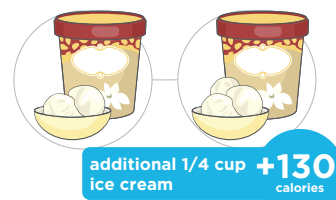
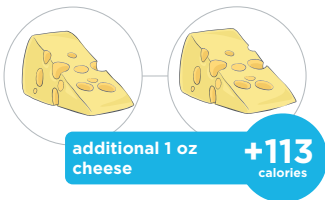
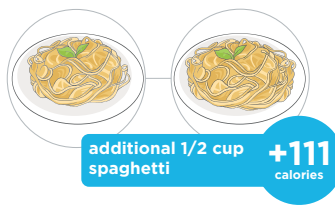
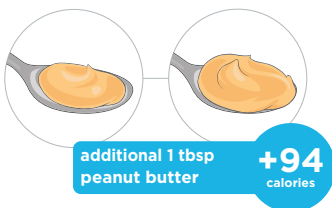
**150** calories **PER DAY MORE**

than those with a higher proportion of Bacteroidetes.

# 5

## PEOPLE AREN'T GREAT AT EYEBALLING PORTION SIZES.

Studies show that people mis-measure portions about two thirds of the time, so it's easy to accidentally consume a lot more calories than you intend to.



## PUTTING IT ALL TOGETHER

### Because...

Calorie counts are imprecise;  
We don't absorb all of the calories we consume;  
How you prepare food changes its calorie load;  
Individuals absorb calories uniquely and variably; and  
People aren't great at eyeballing portion sizes...

**...calorie counting may not be worth the work.**

TOTAL ERROR WHEN COUNTING 'CALORIES IN':  
**UP TO 25%**



## SO, WHAT'S THE SOLUTION?

For a much easier portion  
measurement system, see

**The Surprising Problem  
with Calorie Counting, Part 2**

# Some important notes

## Lowercase ‘c’

For the scientists among our readership: Throughout the introduction and infographic, ‘calories’ — lowercase ‘c’, refers to kilocalories — or ‘Calories’. Over time, popular language has lost the big C/little c distinction.

## Section 1: “Calorie counts are imprecise.”

In 1896, Wilbur O. Atwater, the father of food calories, sampled hundreds of specimens of food products collected at the World’s Fair. Atwater calculated the caloric value of each food using bomb calorimetry, a very accurate and precise method for measuring total energy in any object.

Interestingly, a wide range of total caloric values was found, even for single food types (i.e. apples) bred, picked, and stored identically. As a result, the Food and Agriculture Organization of the United Nations said in a statement:

“Foods, being biological materials, exhibit variations in composition; therefore a database cannot accurately predict the composition of any given single sample of food.”

Even more interesting: Atwater’s total caloric ranges were used to produce the kcal averages still in use on labels and in databases today. (They’re over 100 years old!) For a given food these values could be up to 50% off, as outlined in the infographic.

Bottom line: The trust many of us feel that calorie labels and nutrient databases are exact (or even accurate and reliable) may be misguided.



## Section 2: “Calorie counts that reflect only what we’ll absorb.”

The averages of 4 kcals per gram of protein, 9 kcals per gram of fat, and 4 kcals per gram of carbohydrates — meant to reflect how much energy we actually absorb from food since these values are lower than the energy measured in the food — are Atwater general correction factors developed in 1897 and still in use today.

Subsequently it’s been discovered that carbohydrates high in fiber have different correction factors, depending on the type of fiber (and even your gut bacteria / microbiota).

It’s also been discovered that energy absorption from protein varies. Typical absorption from animal protein is higher than the general Atwater factor — for example, 4.36 kcals per gram of protein in eggs — and lower from most vegetables — generally 2.44 kcals per gram of protein. The revised absorption averages are called Atwater specific correction factors.

Calories on food labels usually use the general factors while the USDA database uses the specific factors.

Further complicating the question of absorption, a new correction factor was developed to take into account the energy burned through digestion of various macronutrients.

Livesey's Net Metabolizable Energy values are:

- protein, 3.2 kcals per gram;
- fat, 8.9 kcals per gram;
- available carbohydrates, 3.8 kcals per gram; and
- fermentable carbohydrates, 1.9 kcals per gram.

Bottom line: The idea that a gram of any protein yields 4 kcal, a gram of any fat yields 9 kcal, and a gram of any carbohydrate yields 4 kcal is a gross oversimplification that could have significant implications when trying to control and balance calorie intake.

## **Section 5: “People aren’t great at eyeballing portion sizes.”**

Research shows that people are generally terrible at estimating caloric intake. Even trained nutritionists underestimate calories in meals by an average of 30 percent.

We often get the portion sizes wrong too. When trying to serve ourselves 1 tablespoon of, say, peanut butter, we often end up getting much more than an actual tablespoon. And it doesn't just happen once in awhile... it happens most of the time.



# THE SURPRISING PROBLEM WITH CALORIE COUNTING

## Part 2: ‘Calories Out’

By John Berardi Ph.D. and Helen Kollias Ph.D.

Think meticulous calorie counting means knowing exactly how much breakfast you’re burning during exercise? Unfortunately, it’s more complicated than that. Here, 4 reasons why daily activity tracking and exercise counts can be problematic.

## We recently ran an [infographic](#) revealing some of the hidden imperfections of calorie math.

Of course, when I say “hidden”, I mean “unknown to most”. Because scientists — at least those specializing in nutrition — have known about calorie math’s quirks for a long time.

The calorie certainly has its uses, and knowing how to apply calorie counts properly is a crucial skill for health and fitness pros (that’s why we devote a whole chapter to it in the [Precision Nutrition Level 1 Certification](#)).

However, despite what most people think, meticulous calorie counting simply isn’t a “must” when it comes to weight management — and that goes for ‘[calories in](#)’ and ‘calories out’.

In this infographic, we present 4 reasons why depending on calorie burn estimates for weight management can be really problematic.

It’ll change your understanding of how nutrition and exercise work together to achieve (or maintain) a fit, healthy body. If you’re a fitness pro, it might change how you coach and communicate with clients.



# THE SURPRISING PROBLEM WITH CALORIE COUNTING

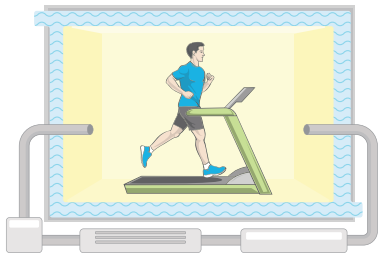
## PART 2: 'CALORIES OUT'

Most people who count calories for weight management assume it's an exact science. Here, 4 reasons why tracking the calories you burn can be problematic.

# 1

## CALORIE BURN ESTIMATES ARE IMPRECISE.

The calorie expenditure figures you see in lifestyle publications, online calculators, and fitness trackers are based on laboratory averages with large margins of error.



### DIRECT CALORIMETRY

Scientists use a hermetically sealed isolation chamber to measure energy burned. It's the most expensive method, so it's rarely used.

MARGIN OF ERROR:  
UP TO **3.3%**

### DOUBLY LABELLED WATER METHOD

MARGIN OF ERROR:  
UP TO **10.2%**

Study subjects drink water containing medical isotopes, which scientists measure in body fluids over time to estimate average daily metabolic rate.

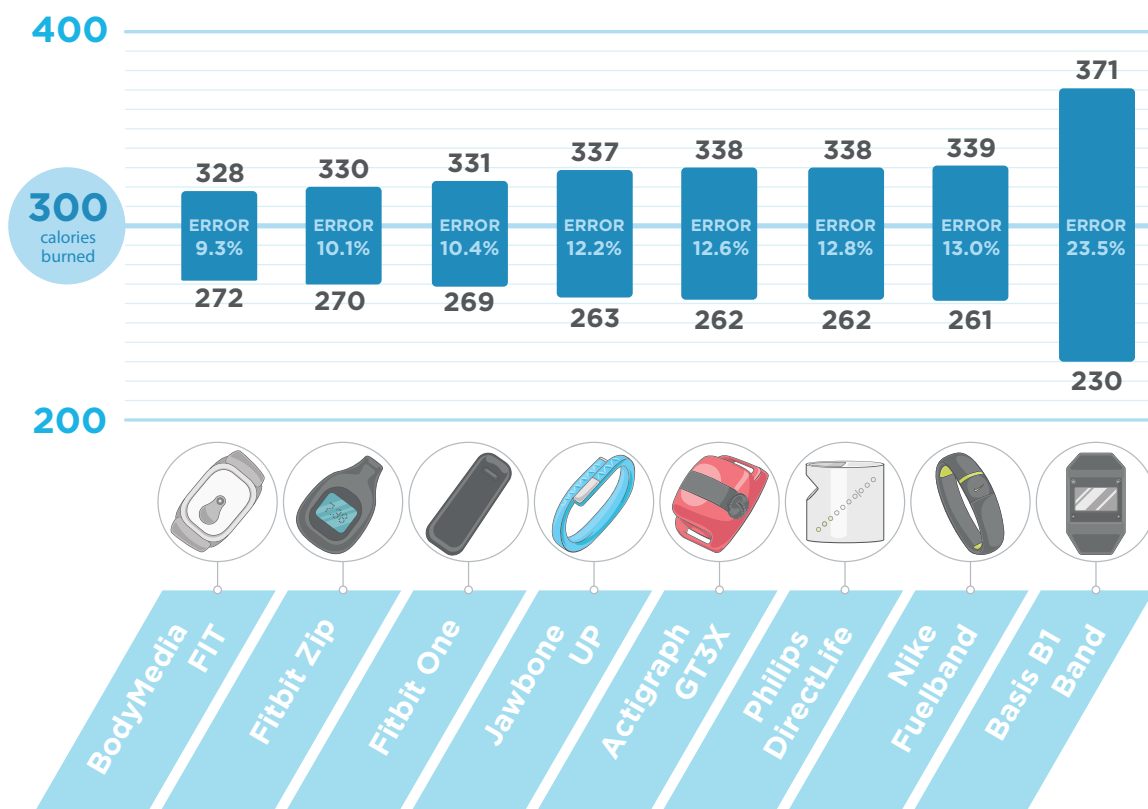


### INDIRECT CALORIMETRY

Gas exchange measurements are taken to estimate energy expenditure. This is the method behind 99% of the calorie burn estimates you see.

MARGIN OF ERROR:  
UP TO **45%**

Consumer fitness trackers are off by about 30% for total daily calorie expenditure. And for aerobic exercise, the devices show errors between 9% and 23%. Here's what that looks like for a 300-calorie workout.

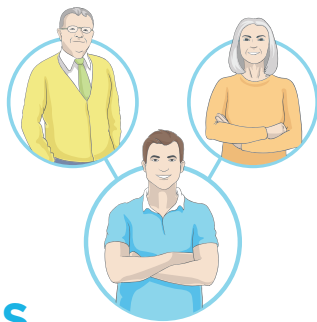


**ERROR: AT LEAST 10%**

# 2

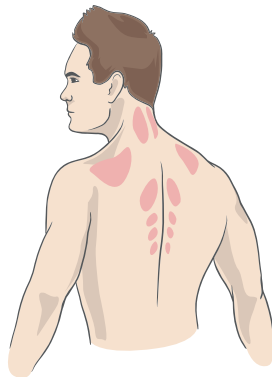
## INDIVIDUALS BURN CALORIES UNIQUELY AND VARIABLY.

Many factors affect the true number of calories you'll burn during exercise and at rest.



### GENES

A single variation in the FTO gene can cause you to **burn 160 fewer calories per day**.



### BROWN FAT

In cold environments, people with brown fat (fat tissue containing more mitochondria) **burn up to 400 calories more per day** than people without it. Diet is also a factor: In one study, people who ate capsaicin burned 120 more calories per day via brown fat activation.



### EPIGENETICS

External factors affect how genes are expressed. In mice, when a mother eats more of a specific nutrient (methyl donors) during pregnancy, her offspring **burn 5% more calories per day** than others. Human studies indicate the potential for similar findings.

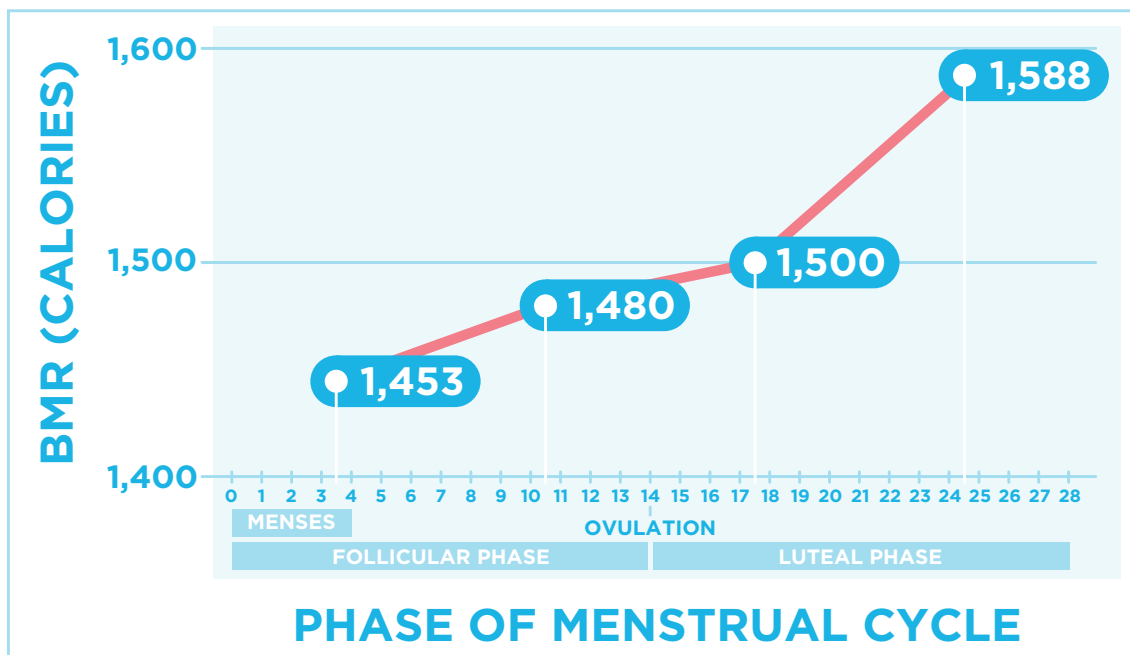


### SLEEP

Sleep deprivation for a single night may **decrease calories burned by 5-20%**.

## HORMONES

Women's menstrual cycle affects their resting metabolic rate.



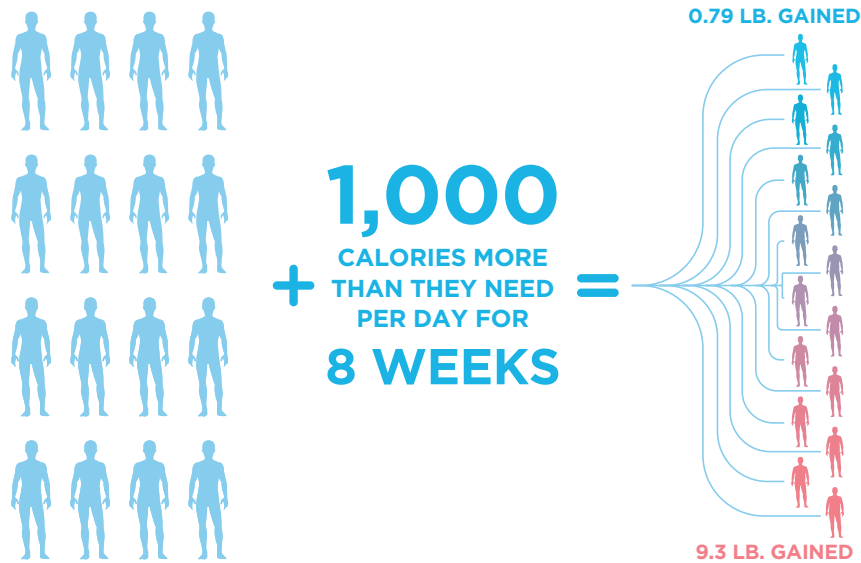
Overall, it's not unusual for an individual's metabolic rate to vary by 100 calories from day to day.

**ERROR: UP TO 20%**

# 3

## WHAT AND HOW MUCH YOU EAT INFLUENCES HOW MANY CALORIES YOU'LL BURN.

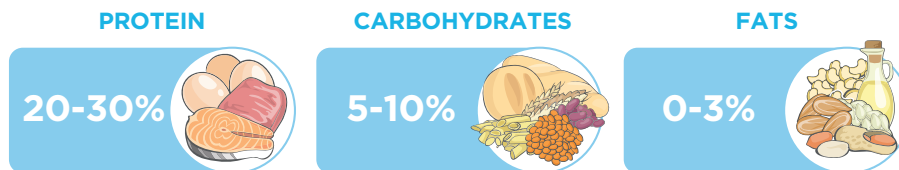
For example, in response to overeating, metabolism increases. However, some people's metabolism will adapt more than others'.



Without adaptive metabolism, each person would have gained 16 pounds.

Importantly, you'll burn more energy digesting some macronutrients than others.

### PERCENTAGE OF A MACRONUTRIENT'S CALORIES YOU'LL BURN VIA DIGESTION

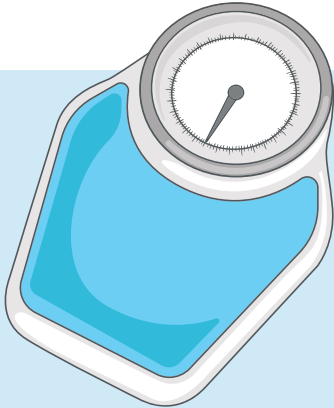


ERROR: UP TO 20%



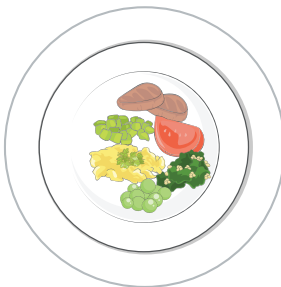
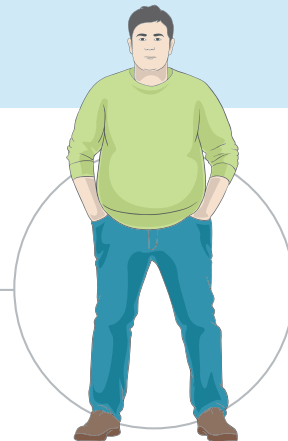
# 4

## YOUR WEIGHT HISTORY INFLUENCES HOW MANY CALORIES YOU'LL BURN.



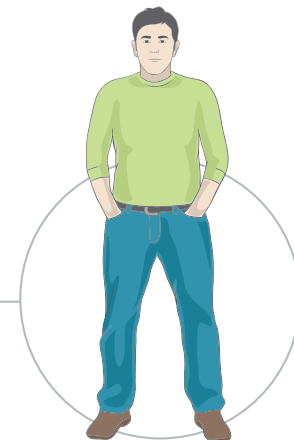
If you've ever been overweight / obese, your metabolic rate may be lower than equations predict due to something called adaptive thermogenesis.

Consider a 40-year-old man who weighs 200 pounds. Equations predict he'll require 2,759 calories / day to maintain his weight.



He starts to eat less in an effort to lose weight.

Over time, he loses 20 lb., or 10% of his previous body weight. Since a smaller body needs to process fewer calories to live, his total caloric output goes down.



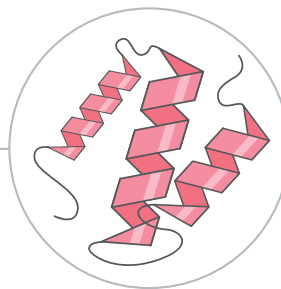


Because the man has been living on a calorie deficit and lost significant weight, his brain thinks he's in danger of starving to death. His fat cells release less leptin, a hormone that influences hunger and activity cues.

This sends the body into calorie conservation mode, causing the man to subconsciously move less (via a drop in non-exercise activity thermogenesis, or NEAT) and making his muscles more efficient so he burns fewer calories even when he exercises.



Because of this adaptive thermogenesis, research shows the man may always require up to 300 fewer calories per day than equations predict to maintain his new weight.



Whereas most equations would predict the man requires 2,623 calories per day to maintain 180 lb., he might actually need as few as 2,323 daily.



**ERROR: UP TO 10%**

## PUTTING IT ALL TOGETHER

Because...

Calorie burn estimates are imprecise;  
Individuals burn calories uniquely and variably;  
What and how much you eat influences the calories you'll burn; and  
Your weight history influences how many calories you'll burn...

...counting 'calories out' may be less reliable than you think.

TOTAL ERROR WHEN COUNTING 'CALORIES OUT':  
**UP TO 25%**



## WHERE DO WE GO FROM HERE?

Tracking [calorie intake](#) and [calorie output](#) is imprecise and variable. Until science comes up with a better way, we like to keep things simple:

Commit to a daily movement practice and ballpark food portions using a hand measurement system.

# Some important notes

## Lowercase ‘c’

For the scientists among our readership: Throughout the introduction and infographic, ‘calories’ — lowercase ‘c’, refers to kilocalories — or ‘Calories’. Over time, popular language has lost the big C/little c distinction.

## Section 1: “Calorie burn estimates are imprecise”

**Direct calorimetry** measures the heat you give off in a sealed metabolic chamber. It’s similar to a bomb calorimeter, which measures the caloric value of a food by burning the food, measuring the heat given off, and extrapolating the caloric value.

**Doubly labeled water** uses two isotopes, tritium ( $^3\text{H}$ ) and  $^{18}\text{O}$  in the form of water ( $^3\text{H}_2^{18}\text{O}$ ). After drinking the doubly labeled water scientists sample water lost through urine, feces, and sweat, and the  $\text{CO}_2$  lost when breathing.

Using the proportions of “labeled” hydrogen and oxygen, scientists can estimate energy used based on some physiological assumptions. However, some of these assumptions only hold true above a certain threshold of carbohydrate intake, so when individuals are on low-carbohydrate diets the calorie estimates are very inaccurate.

**Indirect calorimetry** estimates the calories you burn based on the amount of oxygen you use and carbon dioxide you produce. These values are related to overall metabolism because oxygen is consumed (and carbon dioxide given off) in proportion to metabolic activity. However, many variables affect this relationship. For example, as you consume less carbohydrate it becomes less accurate (because of

basic assumptions it uses to calculate energy burned). These basic assumptions don't hold up on a low carb diet.

## **Section 2: “A single variation in the FTO gene can cause you to burn 160 fewer calories per day.”**

The FTO gene polymorphism has been associated with obesity. In fact, it has the most evidence supporting it and is the most compelling polymorphism for linking obesity risk to a single gene.

## **Section 2: “External factors affect how genes are expressed.”**

Epigenetic changes result in modifications to DNA that don't change the DNA sequence. The two main types of epigenetic modifications are DNA methylation and histone modification.

In the case of the mice referenced in this infographic, mothers ate more of the methyl donors: folic acid, B12, choline chloride, and anhydrous betaine. And their offspring were more metabolically active.

The details of epigenetics in people are less clear. However, recently, researchers found possible epigenetic causes for differences seen in body weights of identical twins. For example: A gene called *Trim28* controls a network of other genes (*Nnat*, *Peg3*, *Cdkn1c* and *Plagl1*) by epigenetic modifications (histone deacetylation). Lower levels of *Trim28* lead to one twin being obese while their sibling (who has higher levels of *Trim28*) is lean.

## **Section 2: “Women’s menstrual cycle affects their resting metabolic rate.”**

Although scientists aren't 100% sure of this, hormone-driven temperature changes during the menstrual cycle are likely the reason



behind the fluctuations in resting metabolic rate in women throughout menses.

### **Section 3: “What and how much you eat influences how many calories you’ll burn.”**

The thermic effect of feeding (TEF, also called thermic effect of food, specific dynamic action, and/or dietary-induced thermogenesis) is the energetic cost of digesting, absorbing and assimilating food.

This includes the energy it takes to chew food; for enzymes to molecularly dismantle your food; and for transporters to shuttle the nutrients across your intestinal lining.

### **Sections 3 and 4: Adaptive thermogenesis**

While adaptive thermogenesis doesn’t occur in everyone all the time, it’s a very important factor when trying to determine ‘calories out’.

In one study conducted at the Mayo Clinic, researchers overfed 16 normal-weight subjects by 1,000 calories per day for 8 weeks. That’s the equivalent of about 2 double cheeseburgers a day. And the participants were asked not to perform purposeful exercise.

Result: While this rate of overeating “should” have produced about a 16-pound weight gain in each subject, participants actually gained very different amounts of weight. The range was quite surprising: The individual with the highest adaptive metabolism gained only 0.79 pounds while the one with the lowest adaptive metabolism gained 9.3 pounds.

Why the difference? The subjects’ measured resting metabolic rate, thermic effect of food, and physical activity didn’t change much.

(Although we know these measures can be somewhat error-prone). However, there were huge differences in measured non-exercise activity thermogenesis, or NEAT.

On average, NEAT went up by 336 calories per day. But from person to person, changes in NEAT ranged from -98 to +692 calories per day. (Yes, that's a minus sign on 98. As in one poor woman actually had less NEAT.)

The changes in their NEAT output directly predicted the amount of fat each individual gained:

*More NEAT, less fat gained.  
Less NEAT, more fat gained.*

This study is supported by other research, which shows:

**Some people find it easy to gain weight, and hard to lose it.**

Their energy expenditure (especially NEAT) doesn't go up much when they over-eat, and they also expend much less energy when they eat less (as their NEAT drops more dramatically). They are also likely to be naturally more sedentary.

**Other people find it hard to gain weight, and easy to lose it.**

Their bodies adapt to over-eating by firing up the metabolic furnace (cranking up their NEAT output), and don't slow things down as much when eating less (NEAT doesn't drop much). This is your classic "hardgainer" who struggles to gain mass. They are also likely to be natural fidgeters.

In many people, the body fights hard to defend against weight loss or gain. Overall, researchers calculate that changes in NEAT account for 85-90% of adaptive thermogenesis.



# FORGET CALORIE COUNTING

**Try this calorie control guide  
for men and women**

**By Ryan Andrews & Brian St. Pierre**

Math? To plan dinner? Isn't there a better way? Yes there is. Just take a look at your hand. Use your fist, palm, cupped hand, and thumb to practice calorie control – while avoiding the hassle of counting calories.

**If you've heard it once, you've heard it a thousand times: The best — maybe even the *only* — way to lose weight is to count calories.**

After all, it's a pretty simple equation: Calories in vs. calories out. Eat more calories than you burn, and you gain weight. Eat fewer calories than you burn and you lose weight.

Except counting calories isn't that simple.

## **The problems with calorie counting**

First of all — on the “calories in” side — you do need to figure out how many calories are in the foods you want to eat. And that takes handbooks, websites, databases and math. Just to plan your lunch. Groan.

Next, you have to assume that the handbooks, websites, and databases' calorie estimates are correct. They're often not. In fact, research has shown they can be off by about 25% because of incorrect labeling, laboratory measurement error, and food quality.

Then, of course, there's the “calories out” side. Estimating your calorie expenditure each day comes with another 25% measurement error because of the equipment you're using, laboratory measurement errors, and individual differences.

**A possible 25% error on the “calories in” side, and *another* 25% error on the “calories out” side.**



Is it even worth:

- pulling out measuring cups to a chorus of boos from family members;
- dusting off the food scale while trying to ignore the taunts of friends;
- wheeling in the abacus from the den to keep up the calorie tally;
- subscribing to apps and web services to track these less-than-accurate numbers?

Sure, we should have an idea of how much food we're eating each day, so we can adjust based on our goals.

But counting calories itself is a drag! No wonder so many people give up and go back to eating the way they were before.

## The calorie counting antidote

Here's the good news: **counting calories is rarely necessary.**

Our Precision Nutrition coaching programs gauge food portions differently. No carrying around weigh-scales and measuring cups. No calculators or smart phones.

All you need is the ability to count to two. And your own hand. Here's how it works:

- Your **palm** determines your **protein** portions.
- Your **fist** determines your **veggie** portions.
- Your **cupped** hand determines your **carb** portions.
- Your **thumb** determines your **fat** portions.

## To determine your protein intake

For protein-dense foods like meat, fish, eggs, dairy, or beans, use a palm sized serving.



For men we recommend two palm-sized portions with each meal.



For women we recommend one palm-sized portion with each meal.

Note: a palm-sized portion is the same thickness and diameter as your palm.



## To determine your vegetable intake

For veggies like broccoli, spinach, salad, carrots, etc. use a fist-sized serving.



For men we recommend 2 fist-sized portions of vegetables with each meal.



And for women we recommend 1 fist-sized portion of vegetables with each meal. Again, a fist-sized portion is the same thickness and diameter as your fist.

# To determine your carbohydrate intake

For carbohydrate-dense foods – like grains, starches, or fruits – use a cupped hand to determine your serving size.



For men we recommend 2 cupped-hand sized portions of carbohydrates with most meals.



And for women we recommend 1 cupped-hand sized portion of carbohydrates with most meals.

## To determine your fat intake

For fat-dense foods – like oils, butters, nut butters, nuts/seeds – use your entire thumb to determine your serving size.



For men we recommend 2 thumb-sized portions of fats with most meals.



And for women we recommend 1 thumb-sized portion of fats with most meals.

## Planning your meals flexibly

Based on the guidelines above, which assume you'll be eating about 4 times a day, you now have a simple and flexible guide for meal planning.

### For men:

- **2 palms of protein dense foods** with each meal;
- **2 fists of vegetables** with each meal;
- **2 cupped hands of carb dense foods** with most meals;
- **2 entire thumbs of fat dense foods** with most meals.

### For women:

- **1 palm of protein dense foods** with each meal;
- **1 fist of vegetables** with each meal;
- **1 cupped hand of carb dense foods** with most meals;
- **1 entire thumb of fat dense foods** with most meals.

Of course, just like any other form of nutrition planning — including calorie counting — this serves as a starting point.

You can't know exactly how your body will respond in advance. So stay flexible and adjust your portions based on your hunger, fullness, and other important goals.

For example: if you're trying to gain weight, and you're having trouble gaining, you might add another cupped palm of carbohydrates or another thumb of fats. Likewise, if you're trying to lose weight but seem to have stalled out, you might eliminate a cupped palm of carbohydrates or a thumb of fats at particular meals.

**Remember: This is a starting point. Adjust your portions at any time using outcome-based decision making, aka “How’s that working for you?”**

## Want more individualization?

For those who want to go further – because they have more advanced goals or because they’re already eating well but still struggling – let’s dig a little deeper.

At Precision Nutrition, we have a really simple shortcut for helping people “eat right for their body type”.

We begin by classifying clients into one of three general categories (or somatotypes):

- I types (ectomorphs),
- V types (mesomorphs), and
- O types (endomorphs).

And each type gets slightly different recommendations.

We’ll cover this more in depth in a future article.

## For fitness and nutrition professionals

As a fitness or nutrition coach, you might have certain food/nutrient goals in mind for your clients. No problem.

But should you tell them to eat 1 g of protein per pound of body weight? Or 25-50 grams of protein with lunch? (Hint: No.)

Many clients don't even know which foods have protein in them, let alone know how many grams each food has and what a portion size of that food looks like. That makes gram-based recommendation pretty tricky.

Fussing with numbers creates a lot of anxiety and confusion for clients. Eating healthy will seem “just too complicated” for them, and they'll eventually give up or wander off in the wrong direction.

Plus, here's the most important piece: *Most clients don't need this level of detail.* The simpler and clearer you can make your recommendations, the more likely clients are to follow them.

So, instead, why not share these guidelines? How much easier can healthy, individualized eating be?



# Handout for clients

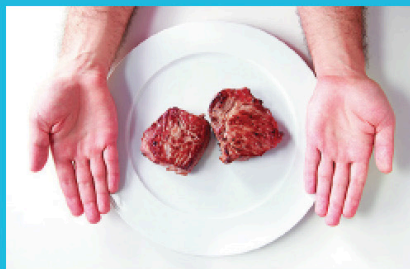
To make this even easier, we created a simple guide for men and women that summarizes our recommendations.

## Calorie Control: A Simple Guide

### FOR MEN

Calorie counting is often complicated, tedious, and inaccurate. So, at Precision Nutrition, we've come up with an easier way to control calories. No weigh-scales or measuring cups. No calculators or smart phones. Just the ability to count to two.

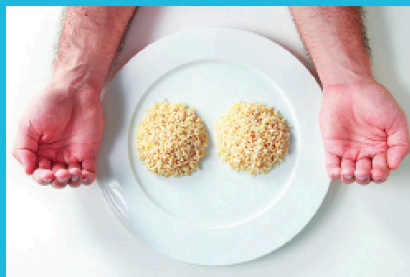
And your hand. To build your meals:



2 palms of protein dense foods with each meal



2 fists of vegetables with each meal



2 cupped handfuls of carb dense foods with most meals



2 entire thumbs of fat dense foods with most meals

**Note:** Your hand size is related to your body size, making it an excellent portable and personalized way to measure and track food intake.

**Also note:** Just like any other form of nutrition planning, this guide serves as a starting point. Stay flexible and adjust your portions based on hunger, fullness, and other important goals.

PrecisionNutrition



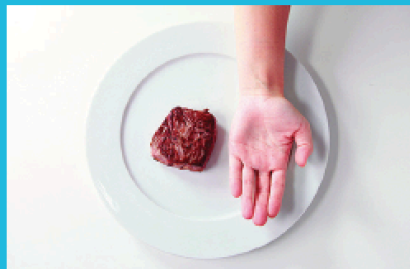


# Calorie Control: A Simple Guide

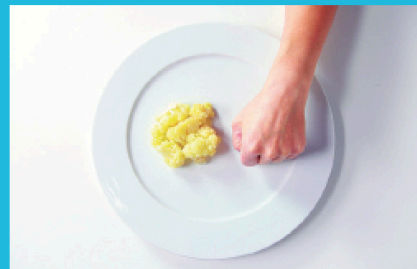
## FOR WOMEN

Calorie counting is often complicated, tedious, and inaccurate. So, at Precision Nutrition, we've come up with an easier way to control calories. No weigh-scales or measuring cups. No calculators or smart phones. Just the ability to count to two.

And your hand. To build your meals:



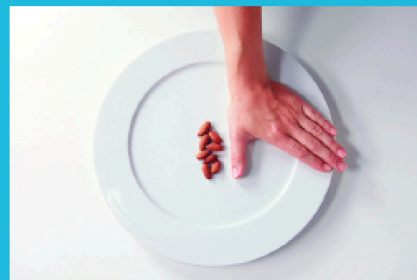
1 palm of protein dense foods with each meal



1 fist of vegetables with each meal



1 cupped handful of carb dense foods with most meals



1 entire thumb of fat dense foods with most meals

**Note:** Your hand size is related to your body size, making it an excellent portable and personalized way to measure and track food intake.

**Also note:** Just like any other form of nutrition planning, this guide serves as a starting point. Stay flexible and adjust your portions based on hunger, fullness, and other important goals.



PrecisionNutrition

In the end, if you'd like to start eating better, just take a look at your hand. Use your fist, palm, cupped hand, and thumb to practice calorie control – while avoiding the hassle of counting calories.





# THE BEST CALORIE CONTROL GUIDE

**Estimating portion size and food intake  
just got a whole lot easier.**

**By Brian St. Pierre**

Head swimming with calorie numbers and daily allowances? Trust us...there's a better way to measure your portions. Try this calorie control guide. It's practical, powerful, and proven with over 45,000 coaching clients.

## Trying to gain muscle? Lose weight? Just eat healthy?

Then finding the right portions is probably on your mind.

But calorie counting is usually a recipe for failure: It's annoying, impractical, and research shows it can be up to 25 percent inaccurate on both sides — calories in, and calories out.

We can't stand it. So we came up with a better way for Precision Nutrition Coaching clients — and anyone else who wants to look and feel better — to get the right amount and balance of food at every meal.

# PORTION CONTROL GUIDE

## FORGET CALORIE COUNTING. TRY THIS METHOD INSTEAD.

Most people think controlling portions means counting calories, but we think there's a better way. Try our (much easier) Hand Measure system instead.

## YOUR HAND IS ALL YOU NEED

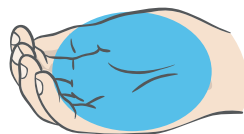
Your hand is proportionate to your body, its size never changes, and it's always with you, making it the perfect tool for measuring food and nutrients - minimal counting required.



A serving of protein  
= 1 palm



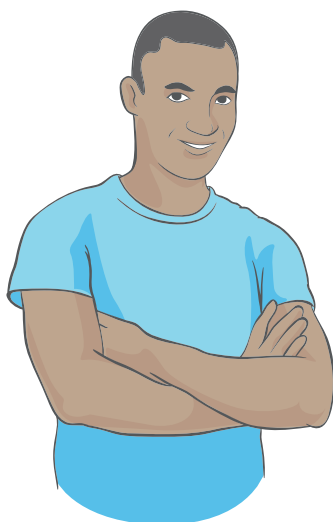
A serving of  
vegetables = 1 fist



A serving of carbs =  
1 cupped hand

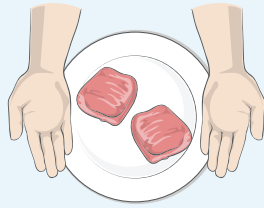


A serving of  
fats = 1 thumb



## HERE'S HOW TO USE THIS METHOD TO BUILD A PLATE



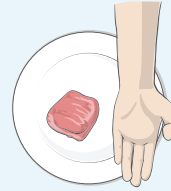


**Men:**  
Two palm-sized portions  
(~ 40-60 g protein)

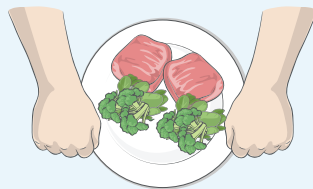
## STEP 1

### PROTEIN

Meat, fish, eggs,  
cottage cheese,  
and Greek yogurt



**Women:**  
One palm-sized portion  
(~ 20-30 g protein)

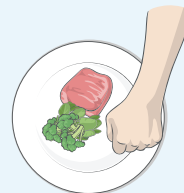


**Men:**  
Two fist-sized portions

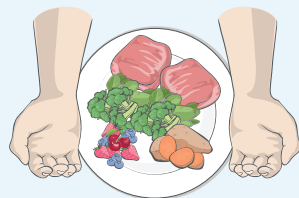
## STEP 2

### VEGETABLES

Broccoli, spinach,  
salad, carrots, etc.



**Women:**  
One fist-sized portion

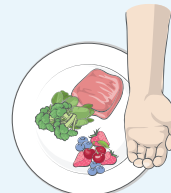


**Men:**  
Two cupped-hand sized portions  
(~ 40-60 g carbs)

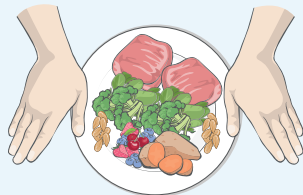
## STEP 3

### CARBOHYDRATES

Grains, starches,  
beans, and fruits



**Women:**  
One cupped-hand sized portion  
(~ 20-30 g carbs)

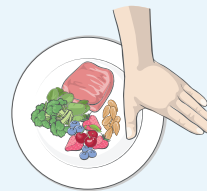


**Men:**  
Two thumb-sized portions  
(~ 15-25 g fat)

## STEP 4

### FATS

Oils, butters,  
nut butters, nuts,  
and seeds



**Women:**  
One thumb-sized portion  
(~ 7-12 g fat)

Men eating 3-4 meals as outlined would get around 2,300 - 3,000 calories each day. Women eating 3-4 meals as outlined would get around 1,200 - 1,500 calories each day.

# NOW, CUSTOMIZE THE PLAN FOR YOU

Active men do best with 6-8 servings of each food group per day (~2,300-3,000 kcal). Active women do best with 4-6 servings of each food group per day (~1,500 - 2,100 kcal).

From there, adjust the number of portions to meet your personal needs and goals.

## IF YOU NEED MORE FOOD BECAUSE YOU...

- Are larger in stature
- Aren't feeling satisfied at meals
- Eat less frequently throughout the day
- Are very active
- Are trying to gain muscle
- Aren't getting muscle-gain results

## IF YOU NEED LESS FOOD BECAUSE YOU...

- Are smaller in stature
- Are feeling too full at meals
- Eat more frequently throughout the day
- Are not very active
- Are trying to lose weight
- Aren't getting weight-loss results

## ...THEN START BY ADDING...

Men: 1 cupped handful of carbs and/or 1 thumb of fat to a few meals each day.

Women: 1/2 cupped handful of carbs and/or 1/2 thumb of fat to a few meals each day.

## ...THEN START BY REMOVING...

Men: 1 cupped handful of carbs and/or 1 thumb of fat from a few meals each day.

Women: 1/2 cupped handful of carbs and/or 1/2 thumb of fat from a few meals each day.

This system is easier than counting calories and nearly as accurate. Just like with counting, though, pay attention to results and adjust as needed.





# MEAL PLANS USUALLY SUCK

**Here are 6 better ways to  
transform your diet.**

**By Brian St. Pierre**

Almost every client starts out asking for a meal plan. The only problem? Meal plans usually suck. Instead of considering yet another doomed eating regimen, check out these 6 ways to transform your diet in a sustainable way.



## “Do I get a meal plan?”

This is the most common question we get from folks who are considering, or just started out in, Precision Nutrition Coaching for [men](#) and [women](#).

**The answer: No, we don't do meal plans.**

But we can't blame people for asking.

Meal plans have long been a staple of the fitness and nutrition industry.

Trainers and nutrition experts are taught to create meal plans. Clients are taught to expect them.

Unfortunately:

## Most of the time, meal plans don't work

You see, traditional meal plans are explicit prescriptions.

*Eat this exact thing, in this exact amount, at this exact time.*

For example, you'll often see:

### **Breakfast – 7:30am**

3 eggs, scrambled

1 cup vegetables

1 piece whole grain toast

1 cup coffee

1 glass water

### ***Morning snack – 10:00***

1 protein bar  
1 handful mixed nuts

### **Lunch – 12:30pm**

4 oz chicken  
2 cups salad  
1 handful seeds  
1 glass water

### **After exercise – 4:30pm**

1 scoop whey protein  
1/2 cup frozen fruit  
1 tsp omega 3 oil  
12 oz water

### **Dinner – 7:00pm**

4 oz steak  
1 cup cooked veggies  
1 baked potato  
1 glass water

You might be thinking, “Good! I want a plan. I’m sick of trying to figure all this stuff out! Just tell me what to eat, PN!”

**Unfortunately, when we try to follow rigid prescriptions like this, lots can (and often does) go wrong.**

For example:

## Scenario 1: You just don't stick to the plan

**No matter how enthusiastic you are, meal plans can be tough to follow.**

This is normal. Life can get in the way.

- People get busy,
- we're not always prepared,
- kids get sick,
- bosses expect you to work late,
- it's always someone's birthday (or a special holiday), and
- sometimes you just don't feel like having a protein bar at 10am.

What's more, even if you've actually paid to have someone make your plan, you might find yourself rebelling against it in subtle (or not-so-subtle) ways.

This is also normal.

Unfortunately, it means you might not get the results you hope for. For instance, a meal plan you hoped would help you lose weight could actually encourage you to gain weight instead.

## Scenario 2: You follow the plan perfectly

In fact, you follow it too well and for too long.

### **Most meal plans are meant to be temporary.**

They're designed to help a person get to a specific short-term goal, like dropping a few extra pounds before a wedding, learning to manage blood sugar, or cutting weight for an athletic competition.

Our bodies can usually adapt to a rigid way of eating for a short period of time.

But if you're too strict for too long, you could wind up with disordered eating habits and lasting health (mental, metabolic, hormonal, etc) consequences.

## Scenario 3: You follow the plan for a little while but it sucks

It isn't sustainable. It doesn't make you feel better. It doesn't keep you sane.

Maybe you see some short-term results (or not). But you hate living and eating this way. You never want to see another stupid piece of lettuce or 4 ounces of chicken.

Eventually, you get so turned off by the process that you regress or quit altogether. You conclude that "eating healthy" sucks.

And you miss your big chance to learn how to make healthier, more enjoyable, more *lasting* and *real* changes.

## Another reason meal plans fail

One of the biggest (yet generally unacknowledged) problems with traditional meal plans is their focus on “nutrients”.

### **Real people don’t eat “nutrients”. We eat food.**

We eat meals, often with other people.

We eat meals that match our cultural background and social interests.

And we rarely measure things precisely.

### **Sure, sometimes an explicit prescription is necessary.**

For instance, professional athletes or bodybuilders (in other words, people who make money off their bodies and athletic skills) use meal plans to prepare for training and competition.

A prescribed meal for someone in that situation might look something like this:

- 1/4 cup dry oats
- 3 oz turkey breast
- 1 cup steamed broccoli
- 5 almonds
- 1 omega-3 supplement
- 1 cup green tea (unsweetened)

## But most of us don't need that level of surgical precision.

We don't normally eat “ounces” of things, or refer to food by their nutrients (like “omega-3 fatty acids”). Instead, we eat foods like:

- hamburgers
- tacos and burritos
- salads
- pasta and noodles
- sandwiches, wraps, pitas and rotis
- stews and curries
- cereal and granola
- stir-fries
- casseroles

**Bottom line:** If you want to eat better, you don't have to get weird about things. You don't need to weigh and measure everything, or count out your almonds.

Ask yourself: “Is someone paying me to do this?” If the answer is no, you likely don't need this kind of approach.

**You just need to think about what you're *already* eating, and how you could make it *a little bit better*.**

This means fiddling and adjusting.

**Making small changes and improvements to what you *already* normally eat and enjoy, one small step at a time.**

Think about a *spectrum* of food quality rather than “bad” or “good” foods.

# Welcome to the meal transformation game

When you play with the idea of a food spectrum or food continuum, you get to experiment with variables like:

- **what you eat;** and
- **how you eat it.**

## Think of this as a game

**How can you play “make this meal just a little bit better” in every situation?**

In which situations is that easier or harder?

When your choices are limited (for instance, when you’re traveling, or eating at a workplace cafeteria), how can you shoot for “a little bit better” while still being realistic, and without trying to be “perfect”?

**Let’s transform breakfast, lunch, and dinner.**

Here’s how that “food spectrum” might look in daily life, with a sample day of eating.



# Transforming breakfast

## Stage 1

Let's say that your go-to breakfast is a whipped-cream coffee drink and a chocolate croissant.

You pick it up in the drive-thru, and wolf it down on your way to work.

This is your starting point. It's not "bad". It's just no longer working for you.

You're getting indigestion from rushing, the croissant doesn't hold you at all, and you've just spilled the coffee on your crotch while changing lanes.

**Now your game is to improve your breakfast just a little bit, starting with what you already have or do.**



## Stage 2

Your opening moves in the meal transformation game:

- You might replace the croissant with a whole grain muffin.
- Instead of a “dessert in a cup”, you get a regular coffee with a single cream and sugar.
- You grab a yogurt cup on your way out of the house for a bit of protein.

Naturally, you're still rushed and busy... so you eat your breakfast with some distractions, while scrolling through emails at work.

But this is a solid start. Well done.



## Stage 3

Next level of game play:

- You switch the muffin to granola with cottage cheese or Greek yogurt.
- You switch the cream in your coffee for 2% milk. (Or even go right to black coffee, you meal player you!)
- You add some colorful fruit.
- You're now eating out of dishes on a table, instead of out of takeout packages off the dashboard of your car.

Of course, you're still checking out the news headlines while you eat...

No problem. We're keeping it real.



## Stage 4

Now you are seriously playing like a pro.

- You've changed "rushing and panicked" to "set aside a little extra time to enjoy a leisurely breakfast".
- You cleverly prepped an egg frittata with veggies in advance on your **food prep day**.
- The coffee's become green tea, since you noticed that too much coffee was tweaking you out.
- The protein plus colorful fruit and veg have become the stars of the meal.
- You've discovered you really like lemon water. (WHAT? You don't even know you anymore!)
- You eat mindfully, feeling relaxed, while watching the sun rise.

Ahhh.





## Transforming lunch

## Stage 1

At this point, starting out, the idea of a sit-down lunch feels flat out ridiculous.

“Eat slowly? Who has time for that during a busy workday? Grab a burger and go!”

Another “car dashboard” meal, eaten on the go.

Another stomach ache and regret.

You decide you might want to play with this meal too.



## Stage 2

To improve this meal a little bit:

- You go to a higher-end burger place where you're pretty sure they use real meat.
- You get a side salad with that burger, and maybe just a few potato chips.
- You choose a diet soda instead of regular.
- You don't eat in your car, but you do eat by your computer.

That's OK. You're progressing.





## Stage 3

At this stage, you're doing a little prep work.

- You whipped up some burgers in advance so they are handy and ready to take to work.
- You also grabbed some nice cheese and whole grain buns from the local market on shopping day.

For lunch, all you have to do is take your homemade burger and its fixins to work.

You still grab a diet cola from the vending machine to wash it down.

You move from your desk to the lunchroom, where you socialize with coworkers. This slows you down a bit and helps you digest and relax.



## Stage 4

You're having the burger without the bun, alongside a nice pre-prepped salad.

Instead of staying at your desk or in the office, you take a break.

You sit outside and get some fresh air while you enjoy your meal.

For a drink, water's all you need.



# Transforming dinner

## Stage 1

It's 8pm. You've just gotten home after an insane day at work.

All you want to do is put food into your face and zone out in front of the TV.

You can't even imagine making anything more complicated than boxed macaroni 'n' cheese right now.

Ketchup and hot dogs are as fancy as it gets.



## Stage 2

Same concept, but:

- You're adding some extra protein with the help of a rotisserie chicken leg that you grabbed at the grocery store on the way home.
- You've added a side salad, just grabbing a few handfuls of pre-washed greens out of a bag.
- You've whipped up your own pasta.

Work is still on your mind, and a couple drinks will take the edge off.



## Stage 3

Things are getting fancy.

- You're upping the protein with a little more chicken.
- You're having a little less pasta.
- You've also added a nice big salad to the mix.
- You've cut the booze to 1 drink.

Plus, you're sitting at the dinner table, instead of flopping down on your couch or standing over the sink.





## Stage 4

Again, we're playing at pro level here.

- With your meal planning and prep strategies, even a weeknight dinner looks good.
- You can whip up a delicious salad in 3 minutes flat and you have some pre-cooked quinoa on hand.
- That rotisserie chicken is still a fast, convenient option, but now it's got some healthy buddies.
- You're indulging in a single glass of good wine these days, and you take time to savor it.



## **Meal transformation is not about reaching perfection.**

If you're at stage 1, all you have to do is shoot for stage 2. Or stage 1.5.

If you're in stage 2, play with getting to stage 3.

And if you're stage 3, heck, you can stay where you are.

You might never get to stage 4. Or it might only happen at times when you're relaxed and have a little extra time.

Stage 4 might only happen on Sunday night, whereas the rest of your week is a mix of stages 1, 2, and — if you're super lucky — 3.

And that's OK.

**How far you progress along the continuum all depends on what YOU want, what YOU need, and what YOU can reasonably do, right now.**

Over time, things can change.

Play YOUR game.

## **Success secret: Have a food prep ritual.**

You might look at these photos and think, “How can people possibly do all that?”

One success secret: Having a food prep ritual.



The idea is simple:

**Practice planning and preparing healthy food** *in advance.*

This makes healthy eating convenient and easy.

It also makes decisions easier: You don't have to make a choice when you're rushed and hangry.

## Your food prep ritual can include:

- Shopping (or arranging to have food delivered)
- Menu and meal planning
- Washing and chopping vegetables
- Cooking/preparing protein (e.g. cooking up some chicken breasts)
- Cooking meals in bulk (e.g. casseroles, soups, stews, chili)
- Preparing the dry ingredients for things like Super Shakes or healthy muffin mix
- Soaking grains/beans beforehand so that they'll be ready to cook later
- Sorting foods into smaller containers or baggies
- Freezing and refrigerating food for later
- Planning healthy meals that someone else cooks (e.g. using a meal delivery service, deciding in advance what to order at a restaurant, etc.)
- Looking ahead to ensure healthy eating strategies during the next few days, especially during difficult times (e.g. a busy week, traveling, dealing with a family crisis, etc.)

**Mix and match any of these to find what works for you.**

**Experiment with systems, skills and strategies that work for YOU and YOUR life.**

**The real goal of a meal plan is to stop using a meal plan.**

Fit, healthy people who have a good relationship with food don't need other people to tell them exactly what to eat at all times.

Living a fit and healthy life doesn't require perfection, either.

## **If you are using a meal plan:**

### **That's OK.**

Some people like prescription, especially if they are working towards a specific short-term goal, like cutting weight to compete in wrestling, making sure they get enough nutrients to support a healthy pregnancy, or fueling their triathlon performance.

### **Keep it short-lived.**

Meal plans are supposed to be temporary, working towards a short-term goal.

### **Keep it real.**

As much as possible, try to make the meal plan fit your real life, not the other way around.

If you're a parent, a worker, a student, or anyone else living in the real world, most of your meals will fall somewhere in the stages 1 through 3 spectrum. That's perfectly OK. Just experiment with being a little bit better, wherever you can.

## **Remember all goals require trade-offs.**

If you want to achieve a high level of performance or exceptional body composition, understand what you are prioritizing and sacrificing.

Getting very lean, for instance, comes with costs.

## **Make sure it's working for you.**

If your meal plan is making you feel:

- overwhelmed
- anxious and fretful
- guilty
- regretful
- bad
- overly rigid and/or preoccupied with food...

or any other negative, unproductive emotion...

...and if you find that meal plans result in you:

- “falling off the wagon”, hard
- getting obsessive and compulsive about food
- restricting foods and food groups...
- doing “all or nothing”, usually ending with “nothing”

## **...then consider trying another approach.**

## What to do next:

### 1. Consider where you sit on the spectrum of meal “stages”.

Where’s your food game at?

What level are you playing at?

What level would you like to play at?

Given your goals and your current situation, what is realistic?

For example, if you currently eat at stage 1, your goal might be to eat at stage 2 for most meals.

Or, if you eat at stage 3 most of the time but find yourself dipping into stage 1 or 2 meals more often than you’d like, aim to stay at stage 3 a little more consistently.

## 2. Start small. One step at a time.

Pick one meal to transform and focus on that.

For instance, you might leave all your other meals at stage 1, and focus on getting lunch to stage 2.

Concentrate on improving that one meal each day.

Using the examples above, you might think about things like:

- adding protein
- adding veggies or fruits
- eating less processed food
- eating more nutrient-dense, whole foods
- drinking less alcohol or fewer sweet drinks
- drinking more water
- eating in a calmer, more relaxed setting
- eating more slowly and mindfully

Of course, don't try to do all these at once.

Try just fiddling with one or two, and see which ones work best for you.

### **3. Add things slowly.**

Once you've improved one meal a day, try another.

If you feel like lunch is a solid stage 2 or 3, play with moving breakfast, dinner, or snacks along the spectrum.

Or, once you've improved one factor in a meal (e.g. adding more protein), try another.

For instance, if you're getting more protein, now try switching out your sugary soda for some soda water. Or adding a little more veggies.

Be patient.

### **4. Set yourself up for success.**

Notice what makes it easier and simpler for you to eat better.

Then figure out how to do or get more of that.

For instance:

- Is planning helping you? How could you do more of that?
- Is healthy meal delivery making it easy? Could you set aside a little more cash to get two meals a day instead of one?
- Is setting aside time on Sunday afternoon to cook some protein a good idea? Great, keep on doing that. Book it in your calendar.

**There's no "right" way to do this. Do what works for YOU.**

## 5. Enjoy your meals.

Meal plans don't usually address how you eat.

Before you change what you eat, you can also try changing how you eat.

- Slow down.
- Breathe between bites.
- Relax.
- Savor your food.
- Sit at a table if you can.
- Use real dishes if you can.

**Give yourself some time and space to appreciate those tasty concoctions you put together.**

Meal time is YOUR time.



## 6. Work towards being your own boss.

Sometimes you might just want someone to tell you what to do.

That's fine, and helpful, especially if you're juggling a lot. But only for a while.

**Over time, look for ways to help yourself *intuitively and wisely* make better choices, rather than just following the rules.**

Think long-term. What do you want to happen over the next few months? Year? 10 years? Do you want to be on a meal plan for the next few decades?

Today, if you were to take one small step towards the “better” end of the meal spectrum, what might that look like?

**How can you start playing the “meal transformation game” today?**

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