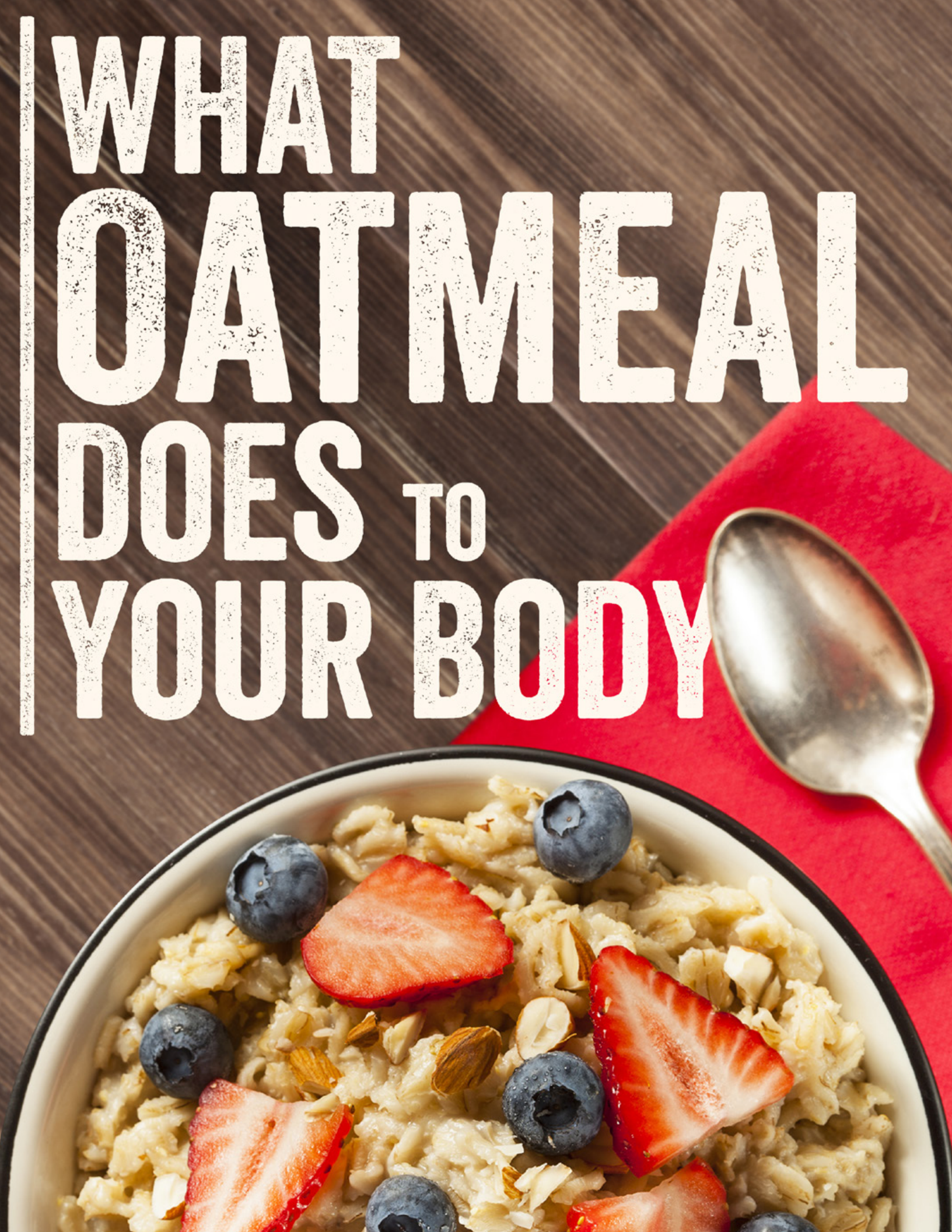
WHAT OATMEAL DOES TO YOUR BODY



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"Samuel Johnson (1709 – 1784) defined oat as 'a grain, which in England is generally given to horses, but in Scotland supports the people.' Whereupon, Patrick Murray, 5th Lord Elibank (1703 – 1778), replied: 'Yes, and where else will you see such horses and men?'"[1]

About a decade ago, when we were in our twenties, things were a lot simpler. Our daily marching orders involved sleeping, eating, working out (sometimes twice a day), eating, training clients, eating, writing books and articles, eating some more…wash, rinse, and repeat.

These days, everything is more complicated—even eating. Everywhere you turn, there's a new food on the "superfood" block. And if you're trying to keep up with the latest diet fad, good luck.

While we don't disagree that there's a boatload of healthy foods and effective diets out there, we'll be the first to admit that trying to keep up can leave you in a state of paralysis by analysis.

Say *what?*

Simply put, when you're in a state of information overload, sometimes it can be really difficult—even terrifying—to make a decision and take action. Perhaps not much better, you may end up jumping from one program to another, which is usually a surefire recipe for failure. Or best case scenario, you'll get a taste of success without ever knowing what's actually working.

In our vast experience coaching clients, there are a few factors that separate the people who are most successful at losing weight and keeping it off from the rest of the pack.

Some of the factors may be obvious, such as high levels of physical activity, social support, accountability, a deadline, and a meaningful incentive.

However, one thing that may surprise you is that the most "successful losers" (today's oxymoron of the day) are incredibly consistent with their eating patterns and food choices. In other words, we notice that people who are best at losing weight and keeping it off pretty much eat the same things, day in and day out.

Guess what? That's not just our observation. Scientific studies published in peer-reviewed journals come to the exact same conclusion.[2–4] And we all know that if it's published in a scientific journal, to borrow a phrase from former Vice President Dick Cheney, "It's a true fact."

In all seriousness, many studies have been conducted looking at the habits of folks who've lost weight and kept it off. After all, while few people will tell you that weight loss is "easy," the main challenge that people face is long-term weight maintenance.

While there several key habits, the one that may be the most surprising is that successful losers generally eat a diet with very limited variety. In other words, they pretty much eat the same foods every day.

Even though they say that variety may be the spice of life, there's no question that food variety promotes increased food and caloric intake.[5] So, when it comes to nutrition for healthy living and weight management, *restricting* variety and keeping things consistent and simple may be the real recipe for success.

That's what made us think back to about ten years ago when everything was simpler, including nutrition. We ate the same things day in and day out, and that worked pretty darn well for us and our coaching clients.

While we focused on eating lean proteins, lots of veggies, some fruit, and healthy fats, there is one food in particular that was a staple for us that we feel has been pushed aside by all the latest and greatest "superfoods" and "ancient grains": OATS.

Oats, when prepared properly, eaten at the right time, and combined with the right

foods, is delicious and nutritious. That's why we wanted to dedicate an entire report to oats (known scientifically as *Avena sativa*), which are arguably one of the healthiest whole grains on the planet. Heck, because we don't have any evidence that there are grains on any other planets in our solar system, we'd go so far as to say that they're one of the healthiest whole grains in our solar system. That's a bold claim that we stand behind!

Oats and Nutrition

Oats have a well-balanced nutritional composition. Oats are a good source of high-quality, smart carbs, fiber, protein (including a good amino acid balance), and minerals. A 100-gram serving of dry, uncooked oats provides the following:

- Calories: 389
- Total Fat: 7g
    - Saturated Fat: 1g
    - Monounsaturated Fat: 2g
    - Polyunsaturated Fat: 2.5g
- Cholesterol: 0mg
- Sodium: 3mg
- Total Carbohydrate: 66g
    - Fiber: 10.5g
    - Sugar: 0g
- Protein: 17g
- Thiamin: 0.8mg (51% DV)
- Riboflavin: 0.1mg (8% DV)
- Niacin: 1mg (5% DV)
- Vitamin B6: 0.1mg (6% DV)
- Folate: 56mcg (14% DV)
- Pantothenic Acid: 1.3mg (13% DV)
- Calcium: 54mg (5% DV)
- Iron: 4.7mg (26% DV)
- Magnesium: 177mg (44% DV)
- Phosphorus: 523mg (52% DV)
- Potassium: 429mg (12% DV)

- Zinc: 4mg (26% DV)
- Copper: 0.6mg (31% DV)
- Manganese: 4.9mg (246% DV)

Beyond the Nutrition Facts

In addition to boasting quite the nutritional profile, what many people don't recognize is that oats are packed with antioxidants. In fact, while the soluble fiber in oats, called *β*-glucan (which we'll talk about more in a moment), gets the majority of the spotlight, the antioxidants in oats also provide substantial health benefits.

The main antioxidant phytochemicals in oats include:

- Tocopherols
- Tocotrienols
- Phytic acid
- Flavanoids
- Non-flavanoid phenolic compounds

While those phytonutrients are common in other foods, oats are especially well known for a unique group of antioxidants called avenanthramides (AVA), which have been reported to have antioxidant activity 10 – 30 times greater than other phenolic antioxidants. In other words, AVA pack quite the antioxidant punch.

AVA may also help promote a healthy inflammatory response through anti-inflammatory properties and by inhibiting the release of pro-inflammatory compounds. Not only that, AVA may help lower blood pressure by increasing the production of nitric oxide, a molecule that dilates blood vessels and increases blood flow.[6]

All in all, oats are more than just your "run of the mill" (pun intended) grain. They're packed with nutrients *and* antioxidants, which protect the body from damaging free radicals. Consuming a diet rich in antioxidants can help support healthy aging by protecting you from excessive oxidative stress, which plays a major role in seemingly all health-related issues.

Oats and *β*-glucan

Oats are a good source of fiber, and in particular, they are packed with a very special type of soluble fiber called oat *β*-glucan, which has numerous health benefits. Let's put it this way: If fiber is a nutrition all-star (which it is), then oat *β*-glucan would be nominated for the MVP (or maybe we should say MVF…for Most Valuable Fiber) award.

For example, thanks to oat *β*-glucan, you'll often see FDA-approved claims like the following on oatmeal packaging:

- Oats may help reduce the risk of heart disease
- Oats can help reduce cholesterol

More specifically, research shows that a daily intake of at least 3 grams per day of soluble oat *β*-glucan can lower the risk of coronary heart disease.[6] As a point of reference, the oat *β*-glucan content in oats ranges from about 2.3 – 8.5 grams per 100-gram portion.

You can find out about how much *β*-glucan is in your favorite oatmeal by looking at the soluble fiber content posted on the Nutrition Facts Panel. If your oatmeal doesn't list the amount of soluble fiber, a good rule of thumb is that oat *β*-glucan makes up about 50% of the total fiber content. In other words, if a serving of oats contains 4 grams of fiber, a pretty good estimate of its *β*-glucan content would be 2 grams.

We've barely scratched the surface on oat β-glucan, and we'll be coming back to it in a moment.

Oats and Resistant Starch

When we say "starchy carbs," what do you think of? Potatoes, rice, bread, cereal, and other grains, right? Since we're talking about oats, they might have even come to mind too. If you're like most people, there may even be a negative (albeit unnecessary) connotation with starchy carbs.

But hear us out.

What you may not know is that there are three different types of starch: rapidly digesting starch, slowly digesting starch, and resistant starch. As you might be able to guess, slowly digesting starch is very healthy; it is slowly broken down and released into the blood, results in a steady glycemic response, helps maintain healthy blood sugar levels, and improves overall nutritional quality of food.[7]

By weight, oats are about 60% starch, and about 22% of that is slow-digesting starch while only about 7% is fast-digesting starch, which is quickly broken down and absorbed. What about the remaining starch?

That, friends, is resistant starch, which has earned the title "weight loss wonder food" and is quite possibly our favorite type of carbohydrate. What the heck *is* resistant starch? We're glad you asked because we *love* talking about it.

As the name implies, it's a very special type of starch that "escapes" digestion. In other words, we don't have the ability to digest it in our small intestines (like we do other carbs), and that means we don't absorb any calories from it. Calorie-free carb? *Yessir!*

Not only does it reduce the calorie content of a food, it also reduces the insulin response to a meal *and* improves insulin sensitivity. Boom! But that's not even the half of it. There's a literal laundry list of benefits attributed to resistant starch.

Because we're science geeks fascinated by this stuff, we were going to go study by study and spell them out, but we know you don't have time for that. Instead, we're just going to lay them out in a bulleted list because, well, there's a good chance that will catch your eye, and believe us, resistant starch is quite the catch.
So, here's that laundry list…resistant starch has been shown to:[8]

- Increase metabolic rate and energy expenditure
- Reduce the caloric density of food
- Decrease the glycemic response to a meal
- Reduce the insulin response to a meal
- Improve insulin sensitivity
- Increase satiety
- Reduce hunger

- Decrease food intake
- Increase fat burning
- Decrease fat storage
- Preserve calorie-burning muscle mass
- Promote weight loss

Wowzers! “Anything else?” you might be thinking, tongue-in-cheek. Yes, there’s actually more.

Resistant starch is also considered a “functional fiber.” Because it’s not digested in the small intestine, it passes along to the colon where it is fermented by gut bacteria. In other words, resistant starch serves as “food” for the good bacteria in the digestive tract. That’s a good thing.

Even cooler, though, are the short-chain fatty acids (like butyrate) that are the by-product of this fermentation process. These bad boys do a ton for overall health. For instance, short-chain fatty acids serve as fuel for our immune system, and they help promote a healthy inflammatory response. But that’s not all. They support a healthy intestinal lining, and get this, they stimulate the release of appetite-crushing hormones.

Um, yes please.

About 25% of the starch in oats is resistant starch, but here’s the deal: Cooking oats *dramatically* reduces the amount of resistant starch. That’s right, cooking oats not only lowers the amount of resistant starch, it makes those carbs (and calories) readily available for absorption.
Get this, **uncooked oats can contain over 55 TIMES more resistant starch than cooked oats!**[9,10]

And since we know that you’re wondering how you might take advantage of this “weight loss wonder food” by eating more uncooked oats, we thought we’d share two of our favorite recipes. Enjoy!

Coach Cristina's Overnight Oats

Too busy in the morning for a healthy breakfast? Nice try, but you'll need to come up with a better excuse. With overnight oats, all you need is about 5 minutes at night to prepare a nutritious, delicious, on-the-go breakfast. Even if you're not the breakfast type, overnight oats are great as a mid-morning or afternoon snack or even as a pre- or post-workout meal.

Ingredients:

- ½ cup rolled oats
- 2 scoops BioTrust Low Carb (Vanilla Cream works great but feel free to experiment)
- ¾ cup unsweetened vanilla almond milk
- 1 tbsp natural peanut butter
- ½ banana, diced
- ¼ cup plain Greek yogurt
- 1 tbsp chia seeds
- Cinnamon (optional)

Directions:

1. Add all ingredients to a Mason jar and stir thoroughly until mixed.
2. Pop it in the refrigerator overnight (or, for at least 6 – 8 hours).
3. In the morning (or whenever works best for you), open the jar, give it a stir, and enjoy!

Coach Tim's Homemade Energy Bites

I started making these homemade energy bites when my wife was pregnant. She needed to have a healthy, convenient, quick snack she could take with her—and even eat during the night. Little did I know that we would both be hooked. I still make these once (if not twice) a week. Rumor has it that oats can help with breast milk supply, so they're a staple for my wife. What's my excuse? They're just that darn tasty!

Ingredients:

- 1 ½ cups rolled oats
- 5 scoops BioTrust Low Carb (I typically use Vanilla Cream, but you can mix and

match flavors to find the perfect combo for your palette)
- ½ cup pumpkin seeds (you can swap other seeds, nuts, or dried fruit)
- ½ tbsp cinnamon
- ½ cup organic creamy peanut butter (or nut butter of your choice)
- 1 tbsp MCT oil (optional)
- 3 tbsp honey (you can substitute maple syrup or other sweetener if you like)
- 6 tbsp unsweetened vanilla almond milk (you can use water or liquid of your choice)

Directions:

1. In a large mixing bowl, combine all dry ingredients: oats, BioTrust Low Carb, seeds, and cinnamon.
2. Add all wet ingredients (i.e., nut butter, MCT oil, honey, almond milk).
3. Using your hands (yep, we're doing this old-school), mix the wet and dry ingredients until well combined. It should be a moist and a little sticky. If it's too dry, just add a little more liquid (e.g., almond milk) one tablespoon at a time. If it's too wet, start over. Just kidding. You could try adding a little bit more BioTrust Low Carb and/or oats, about one tablespoon at a time to absorb some of the moisture.
4. After it's all mixed, you can either roll into small bite-sized balls, or you can take the lazy man's approach (that's my preference) and press the "dough" into a square- or rectangle-shaped pan, cutting the into squares.

Oats and Magnesium

Did you know that ALL cells in your body require magnesium? Did you know that magnesium is involved in over 300 enzymatic reactions? Did you know that magnesium plays important roles in energy production, metabolic rate, blood glucose management, protein production, and more? Did you know that magnesium supplements are among the top ten most popular dietary supplements?

Most importantly, did you know that magnesium deficiency is very common, and about 50% of Americans fall well short of the recommended daily intake for magnesium?

A half-cup of oats (dry) contains a whopping 34% of the recommended daily intake,

making oats one of the better food sources of this critical mineral.

While most people associate magnesium with bone health (and it's definitely important to maintain strong bones), magnesium also helps with:

- Energy production
- Exercise performance
- Mood and feelings of wellbeing
- Heart health
- Blood sugar management
- Supporting a healthy inflammatory response
- Reducing muscle soreness and discomfort
- Migraine headaches

Oats and Diet Quality

Given all that awesomeness—and considering that oatmeal has long been synonymous with "health"—it comes as virtually no surprise that people who eat more oatmeal have:[11,12]

- Better nutrient intakes
- Higher diet quality
- Lower body weights
- Less belly fat
- Lower insulin levels

Of course, these are just associations. But here's what's crazy. Researchers find that oatmeal consumers have significantly lower body weights and belly fat (waist circumference) than nonconsumers despite eating the same number of calories and engaging in the same amount of physical activity.

Pretty nifty stuff, right? Well, it's just the tip of the iceberg…so let's dig a little deeper!

Oatmeal and The Nordic Diet

While there's no such thing as the "oatmeal diet" (Hint, hint if you're looking to find your

niche in the diet space.), oats are a centerpiece of the Nordic Diet. No, the Nordic Diet is nothing like the Swedish meatballs you'd find at IKEA®.

The Nordic Diet consists of six basic foods:

- Fish
- Cabbage (including Brussels sprouts, broccoli, cauliflower, kale, red cabbage, and white cabbage)
- Oatmeal
- Rye bread
- Apples and pears
- Root vegetables (such as carrots and potatoes)

That's it. Pretty plain, right? But remember what we said at the beginning. Keep things simple and limit variety, and you're golden. Studies have shown that sticking to a healthy Nordic Diet can reduce body fat, improve insulin sensitivity, and help lower the risk of type 2 diabetes and stroke.[13,14]

Oats and Belly Fat

Did someone say "belly fat"? Why, yes we did. A few times, in fact. You already know that people who eat oats tend to have lower waist circumferences and less belly fat, but let's take a step back for a second and talk about oat *β*-glucan. We told you we'd be coming back to it, didn't we?

Remember that oat *β*-glucan is a type of soluble fiber. Why is that important? We were hoping that you'd ask that.

A recent study conducted at Wake Forest Baptist Medical Center provides convincing evidence that increasing intake of soluble fiber is one of the most effective ways to slash belly fat. In fact, according to the study, the way to zero in and reduce belly fat is simple: eat more soluble fiber and engage in regular physical activity.[15]

Check this out: The researchers found that for every 10-gram-per-day increase in soluble fiber, the amount of belly fat was reduced by a remarkable 3.7%. By

comparison, increased physical activity resulted in a 7.4% decrease in belly fat.

We don't know about you, but that's pretty darn impressive. While we're all about ramping up your physical activity and vigorous exercise, it's crazy to think that eating more fiber is half as effective as busting your butt at slashing belly fat.

Oats and Gut Health

Ready for more on oat *β*-glucan?

Along with resistant starch (found in uncooked oats), oat *β*-glucan has "prebiotic" effects.[16,17] Most prebiotics are dietary fibers, but not all dietary fibers are prebiotics. Prebiotics are non-digestible nutrients that are fermented by the beneficial microbes (e.g., probiotics) of your gut.

In other words, prebiotics are like "food" for healthy gut bacteria, and they provide health benefits by favorably impacting the composition or function of the gut microbiota. That is, prebiotics help support a healthy balance of gut bacteria, and they also help ensure that our microbes are working optimally. And oats are a solid choice to help promote healthy gut bacteria and gut function.[18]

While probiotics are all the rage, there are numerous things that prebiotics have the potential to do for you and your health:

- Improve digestive function and bowel regularity
- Support immune function and the body's natural defenses
- Improve mineral absorption
- Help control appetite
- Help manage caloric intake
- Support glucose metabolism

When gut microbes ferment prebiotics, the process results in the formation of short-chain fatty acids (SFCA). Yes, we know we already talked about this in the section on resistant starch, but it's just so awesome, we wanted to reiterate it.
One SFCA is called butyrate, which serves as fuel for the immune cells that populate

the gut. Believe it or not, 70 – 80% of your immune system resides in your gut.[19] This means that butyrate is crucial to supporting the body's natural defenses.

Butyrate also has anti-inflammatory properties, it can help support healthy mitochondria (the energy factories of our cells) function and number, and it may even offer neuroprotective effects.[20] But wait, there's more.

SCFA also stimulate the body's release of key satiety and appetite-suppressing hormones. SCFA have also been shown to reduce body weight and improve blood glucose management.[21]

All this appetite talk is making us hungry. Maybe we should have some of Coach Tim's Homemade Energy Bites. Speaking of appetite, oats may be just the weapon you need to manage yours.

Oats and Satiety

Hopefully you're not getting tired of hearing about oat β-glucan yet. Numerous studies have shown that both oat β-glucan and oatmeal promotes satiety and reduces food intake.[11,12,22] Oat *β*-glucan, like other soluble fibers, slows the rate that the stomach empties and promotes the release of key satiety hormones, such as PYY and GLP-1, which help increase feelings of fullness and reduce appetite.

Some have called satiety (which refers to feelings of fullness and satisfaction after a meal) the "new diet weapon" due to its capacity to manage hunger.[23] Foods with high satiety value can help:

- Reduce hunger between meals
- Increase the duration between meals
- Decrease the desire to eat, especially when you're not hungry
- Reduce the size of meals when you do eat
- Adherence to a reduced-calorie diet
- Resist environmental cues to eat
- Reduce cravings

In a seminal study published in the *European Journal of Clinical Nutrition,* Australian researchers set out to establish a "satiety index" of 38 common foods. Out of all the foods tested, oatmeal ranked third highest in satiety.[24] Overall, greater levels of satiety can help you feel fuller longer, stick to a healthy nutrition plan, decrease caloric intake, limit emotional eating, lose body fat, and maintain better health.

Oats and Heart Health

Do you like the movie *Forest Gump?* Well, so do we. Who *doesn't*? There are a ton of great quotes from the movie, but one of the most popular was when Forest said, "Jenny and me was like peas and carrots." He was talking about how Jenny and him were always together—they went hand-in-hand.

You know what else is like "peas and carrots"? Oats and heart health, that's what.

We've already touched on the fact that the evidence is so strong that oats (more specifically, oat β-glucan…there it is…again) lower total and LDL cholesterol as well as the risk for heart disease that the FDA allows oatmeal manufacturers to add these bold health claims to their packaging.

Oh, and if you have a rub against the FDA, we'd just like to add that the association between cholesterol lowering and oat *β*-glucan has received the "thumbs up" from government agencies worldwide, including Canada, Europe, Australia and New Zealand, and Malaysia.

That's legit.

Here's the thing: You need to consume at least 3 grams per day of oat β-glucan in order to reap these benefits.[25] This amount—which you can get from a 60-gram (about ¾ cup) serving (dry weight)—has been shown to significantly lower (by ~ 5 – 10%) levels of total and LDL cholesterol, which are well-established risk factors for heart disease.[26,27]

If you're interested in "geeking out" a little bit, let's talk about how oat *β*-glucan flexes its cholesterol-lowering muscle. Because oat *β*-glucan is a soluble fiber, it forms a thick, gel-lick consistency in the digestive tract—kind of like wallpaper paste. This gel binds to

cholesterol and cholesterol-like substances within the gut, preventing their absorption. Eventually, the gel and the cholesterol are excreted from the body. Pretty nifty, eh?

Oats and Glycemic Control

Besides heart health, one of the most noteworthy benefits of oats center around their ability to improve glycemic control and support healthy insulin levels. Once again, these benefits tie back to good ol' oat *β*-glucan, which delays the rate that food exits the stomach and how quickly carbohydrates are released into the bloodstream.[22]

Handfuls of studies have shown that oat *β*-glucan reduces postprandial glucose and insulin responses and improves insulin sensitivity.[28] Say what? In other words, oat *β*-glucan helps lower both the glycemic and insulin responses to carbohydrate-containing meals. That means that oat *β*-glucan helps improve carbohydrate tolerance and lowers the glycemic index of foods.[29]

That's a good thing—a really good thing.

On one extreme, poor glycemic control, poor insulin sensitivity and function, and poor carbohydrate tolerance are hallmarks of type 2 diabetes, which as you know pretty much increases the risk for seemingly all negative health outcomes. But even not to that extreme, poor carbohydrate tolerance means impaired fat burning, increased fat storage, impaired metabolic flexibility, dramatic fluctuations in energy levels, impaired ability to concentrate, increased hunger, increased cravings for sweets, increased food intake, and more.

In addition to the common explanation that oat *β*-glucan, a soluble fiber, helps delay gastric emptying, also remember that uncooked oats contain a copious amount of resistant starch, which helps lower the blood glucose response to a meal and improves insulin sensitivity. On top of that, you may also remember that both oat *β*-glucan and resistant starch are fermented by the gut bacteria, resulting in the production of SCFA, which may also help promote glycemic control and insulin sensitivity.

While chit-chatting about the "why" is fun and all, the "what" is most important. It's pretty darn clear that eating oats may help improve insulin sensitivity, lower the blood glucose

response to a carb-containing meal, and improve carb tolerance. I don't care who you are, that's good stuff right there.

All Oats Are Not Created Equally

Now, before you run out to the market to pick up some oats, let's make something abundantly clear: All oats are **not** created equally. The processing methods can substantially impact the nutritional quality and health benefits of oats.

Oat groats are the most minimally processed form of oats. However, they take a very long time to cook. Instead, most people prefer steel-cut or rolled oats. Steel-cut oats are produced by simply cutting the whole groats into smaller pieces. In other words, steel-cut oats are the least processed form of oats. Oat flakes, or rolled oats, are produced by flattening either whole or steel-cut groats with rotating rollers.[30]

There's another step in the process, however, which results in "instant" or "quick" oats. These types of oats tend to be the most popular, and they're what are commonly found in the "kiddie" pre-packaged oatmeal products, which have other issues (including added sugar and artificial ingredients).

The difference between rolled oats (or old-fashioned oats) and quick oats is the thickness of the oat flakes. The former are thicker while the latter are smaller and thinner, meaning they require a shorter cooking time. Also, instant oats are processed at a higher temperature to partially gelatinise the starch. Try not to let that confuse you. What that means is that the starch is more readily digestible, and that means less resistant starch and a quicker, faster rise in blood sugar.

So, armed with that info, do you think there's any difference in glycemic response between less processed oats (steel-cut and rolled oats) compared to more processed oats (quick and instant)? If you said yes, you earned a gold star!

In an extensive review, researchers found that the glycemic response to quick and instant oats is 35% higher than the response to steel-cut or rolled oats.[31] That's a substantial, noteworthy difference. Interestingly, it doesn't seem like the fiber or oat *β*-glucan content is influenced by processing methods.

So, if you're stuck with the continental breakfast and your only option is kiddie oatmeal, then we pardon you. But when you have the choice, you've got to go with steel-cut or rolled oats for optimal health and metabolic function.

Oats and Protein

Clearly, oats are pretty awesome. So awesome, in fact, that we feel they're best described as awesome-sauce; that's what the cool kids these days say about something that's *extremely* good.

But, we're going to let you in on a little secret on how we make oats even better: Add protein. You already know that oats have a satiety value and promote glycemic control, but the addition of protein enhances these effects, stepping up oats' game up to a whole other level.

In fact, when it comes to satiety, protein takes the crown.[32] That is, protein increases satiety to a greater extent than carbohydrate or fat, and in doing so, it tends to reduce hunger, cravings, and overall food intake. Studies consistently show that a high-protein breakfast is superior to a "normal" protein breakfast (such as cereal or oatmeal) for increasing satiety, reducing hunger, increasing appetite-curbing hormones, and decreasing cravings and food intake.[33–36]

Considering that many people like to eat oatmeal by itself (or with other carb-dense foods, such as fruit), it's a good idea to add some protein. By far, our favorite is a little something we like to call PROatmeal. Say what?

We make PROatmeal simply by adding 2 – 3 scoops of BioTrust Low Carb to our morning oatmeal. If we're cooking the oatmeal, we add the protein after the oats are prepared. Since we're so fond of resistant starch, most of the time we don't even cook the oats. We simply put our oats and some liquid (e.g., water, unsweetened almond milk) in a bowl, add our BioTrust Low Carb, mix it up, and voilà: PROatmeal!

Oh, there's one more reason to add protein to your oats: Adding protein to a carb-containing meal significantly lowers the glycemic response.[37,38] Remember, in the short-term, carbohydrate management is important for maintaining energy levels, preventing

fatigue and energy crashes, supporting appetite control, reducing cravings, performing at your peak, and more. Over the long haul, it's crucial for supporting brain health, heart health, healthy metabolic function, a healthy body weight, quality of life, and pretty much every aspect of overall health.

Oats and Timing

When you eat carbs (such as oats) is also important, especially if you're the type of person who feels like you pack on the pounds just looking at carbohydrates. Even if you're not, research suggests that our bodies are wired to handle carbs better earlier in the day.

Have you ever heard of the phrase "circadian rhythms"? This is basically your body's 24-hour internal clock. Research on circadian biology shows us that carb tolerance and insulin sensitivity are greatest in the morning and then decline over the course of the day. Believe it or not, the science community calls this phenomenon "afternoon diabetes."[39,40]

What's more, research also shows that the "thermogenic burn," which refers to the calories the body burns off to process the food we eat, is also highest in the morning. So, even though the research is inconsistent, maybe there is something to the ol' adage "Eat breakfast like a king, lunch like a prince, and dinner like a pauper."

Since oats are synonymous with breakfast, this shouldn't be too hard to put into practice. Just remember to add some protein. PROatmeal, anyone?

Besides your first meal of the day, two other optimal times for carb-rich meals are in the hours before or following intense exercise. Eating a carb-containing meal (especially a low glycemic carb like oats) before exercise helps optimize performance, maintain stable energy levels, and promote fat burning.[41] After intense exercise, muscles are like sponges, and carb tolerance and insulin sensitivity are both greatly enhanced.[42]

Porridge, Anyone?

We love oats, and if you didn't already, we hope that have a greater appreciation for them and how awesome they are. They're nutritious, delicious, and associated with a long list of health benefits. It's no wonder that oats have long been regarded as a "healthy" food and

consistently make the “top ten” lists of virtually every reputable organization.

While this report was packed with more information than oats are nutrition, here are a few important things to remember:

- For heart health, shoot for at least 3 grams of soluble fiber (oat *β*-glucan) from oats daily.
- Choose steel-cut or whole rolled oats over quick or instant oats.
- Experiment with uncooked oats to tap into the potential health benefits of resistant starch.
- For optimal satiety and glycemic control, make sure you pair your oats with protein-rich foods (e.g., BioTrust Low Carb).
- The “best” times to eat carb-dense foods (such as oats) are at your first meal of the day, a couple hours before intense exercise, and in the hours after intense exercise.

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