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Carbs v. Fat: Here We Go Again

By Matt Brzycki, Assistant Director of Campus Recreation, Fitness, Princeton University

The cover of a recent issue of *Time* magazine offered this not-so-sage advice to readers: Eat butter. The accompanying report began by spinning a deceptive yet seductive tale as to why the recommendation to eat less fat and more carbohydrates – first put forth to Americans in the late 1970s – has failed.

As the low-carb crowd likes to point out – and as noted in the report – statistics show that people decreased their intake of fat and increased their intake of carbohydrates . . . and they gained weight. The source of these statistics is a series of nine surveys – formally known as the National Health and Nutrition Examination Survey (NHANES) – that has been conducted by the National Center for Health Statistics on a regular basis since 1971. Alas, researchers from the Department of Exercise Science at the University of South Carolina found that the NHANES is “methodologically flawed” and the data are “physiologically implausible.” Translation: The numbers aren’t believable.

So even though people were told to eat less fat and more carbohydrates, there’s no credible evidence that they did. Therefore, it’s a grievous mistake to finger carbohydrates as the main suspect in weight gain.

One of the inherent problems with the NHANES is that it relies heavily on self-reported data and any dietary recall is subject to, well, recall. The fact of the matter is that people tend to underreport the number of calories that they consume, often by several hundred or more per day. In particular, obese and overweight individuals underestimate more than normal-weight individuals and women underestimate more than men. In the NHANES, for example, obese women underestimated their intake by as much as *856 calories per day*. Moreover, people underestimate their intake of foods that are perceived as “socially undesirable” such as those that are high in fat and sugar. Another issue with food surveillance in general is that it’s not representative of an individual’s usual intake of food. In other words, people don’t accurately report what they typically eat.

But for the sake of argument, let’s suppose that the data in the NHANES are true and people have been eating less fat and more carbohydrates. Well, a closer look at the numbers shows that it was a little less fat and a lot more carbohydrates. The end result was a lot more calories. According to the data, the daily intake went from 2,109 calories in 1970 to 2,586 calories in 2010. And if the expenditure of calories (through physical activity) wasn’t increased by the same amount, then the real reason why people have gained weight is because their caloric intake was greater than their caloric output, not simply because they ate more carbohydrates.

Eating less fat and more carbohydrates will work, provided that it’s a gram-for-gram swap or thereabouts. One gram of fat has nine calories and one gram of carbohydrate has four calories. So let’s say that you’ve been consuming 100 grams of fat per day. That’s 900 calories. Now, decrease your fat intake by 50 grams per day and increase your carbohydrate intake by 50 grams per day. That’s still a total of 100 grams but the number of calories in those 100 grams goes from 900 to 650. Do that for two weeks and you’ll have consumed 3,500 fewer calories which would produce a loss of one pound of fat (everything else being equal).

This concept has been corroborated by research. For instance, one study determined that a 1% increase in the percentage of calories from carbohydrates (or protein, for that matter) coupled with a corresponding 1% decrease in the percentage of calories from fat led to a reduction in the number of calories that were consumed. The idea is to choose foods that are less dense in calories. And seriously, does it really make sense that in order to lose fat you should eat more of it?

Something else in the report that must be disputed is the notion that pasta will “encourage the body to store the calories as fat and intensify hunger.” There’s no convincing evidence to support this claim. None. Just look at it this way: If pasta makes you hungrier, then you’d eat more pasta. If you eat more pasta, then you’d get hungrier and eat more pasta. When would this vicious cycle ever end?

Full disclosure: I’m a long-time lover of pasta as well as potatoes, bread, rice, bagels and the ilk. Right now, I weigh about six pounds more than I did in January 1976 when I was an 18-year-old Marine. So despite being a big fan of most things carbohydrate, in the past 38+ years I’ve gained roughly six pounds. I’m not overweight – I weigh about 171 pounds and my body fat is consistently around 10% – and I’m not diabetic. Eating pasta

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didn't "encourage" my body to store the calories as fat or "intensify" my hunger. Sure, this is a case study of one but there's no reason to think that my physiology operates any differently than anyone else's.

Perhaps the most troubling part of the report, however, was the scintillating way in which it portrayed saturated fat. The report tried to make the case that saturated fat isn't nearly as bad as once thought. Curiously, as proof, the report highlighted a recent study and noted that it "came under criticism for the way [the researchers] evaluated the evidence." That's putting it mildly. The study – though published in a prestigious medical journal – was met with a heavy barrage of sharp criticism from a phalanx of scientists, including one who referred to it as "shoddy research" and another from the Harvard School of Public Health who called for its retraction.

Among other things, the study – which reviewed and analyzed 72 studies that involved a total of 530,525 subjects – was flagged by the academic community for the selection of some studies and the omission of others which skewed the findings. That's not exactly the type of research that you'd want to reference in support of your position.

And contrary to what was haphazardly reported by much of the media, the study didn't determine, recommend or imply that people can eat as much saturated fat as they want without remorse. Nonetheless, how many people saw the cover of *Time* magazine that instructed them to "eat butter" and considered this as an open invitation to go on a feeding frenzy for fat?

Getting back to the report, there were at least four points made about saturated fat that are patently false:

1. Saturated fat increases high-density lipoprotein. Not true. It's widely known and accepted that saturated fat increases low-density lipoprotein (LDL, the "bad" cholesterol) and *decreases* high-density lipoprotein (HDL, the "good" cholesterol). These two outcomes are associated with a greater risk of heart disease, making it a potentially lethal combination.
2. Saturated fat increases LDL and HDL so it "makes saturated fat a cardio wash." Not true. As just noted, saturated fat doesn't increase HDL. And even if saturated fat did increase HDL, it doesn't necessarily follow that an increase in HDL completely offsets an increase in LDL such that it's an even trade or some sort of "cardio wash."
3. Saturated fat "seems to have at worst a neutral effect on . . . heart disease." Not true. This statement is based on the false premise of a "cardio wash."
4. Saturated fat – "in some cases" – has a more "benign effect on the body than previously thought." Not true. This statement is also based on the false premise of a "cardio wash."

At this juncture, encouraging or even suggesting that it's okay to eat more saturated fat is premature at best and reckless at worst. And for the record, butter checks in at about 100% fat . . . and most of that is in the form of saturated fat.

Two main things must be understood about carbohydrates and fats:

1. There are different types of carbohydrates. For many years, carbohydrates were broadly classified as either sugars or starches but this is much too simplistic; it's also inaccurate since, technically, *all* carbohydrates are comprised of one or more sugars. The two main types are simple carbohydrates and complex carbohydrates (which includes fiber). For the most part, complex carbohydrates have a higher nutritional value than simple carbohydrates, offering a rich supply of vitamins and minerals. This isn't to say that all simple carbohydrates are bad or unhealthy; some foods and beverages that are high in simple carbohydrates have a high nutritional value, including low-fat milk, yogurt, fruits and vegetables.
2. There are different types of fats. The three main types are saturated fat, unsaturated fat (which can be subdivided into monounsaturated and polyunsaturated fats) and trans fat. Unsaturated fat is less

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harmful than saturated fat and trans fat. Replacing at least some saturated fat with unsaturated fat has been shown to significantly reduce deaths and events that are related to heart disease.

A final item that merits consideration is the role that carbohydrates and fat play as sources of energy. (Protein can also provide energy but its use is negligible at rest and minimal during exercise.) Whether your body elects to use fat or carbohydrates for energy depends on the intensity of an activity. At low levels of effort – like walking, for example – your body prefers to use a greater percentage of fat; at higher levels of effort – like jogging, running and sprinting – your body has a progressively greater reliance on carbohydrates. When your stores of carbohydrates are depleted, your body must shift its preference to your stores of fat. At first blush, this might not sound like a bad thing. Hey, you're using fat, right? The problem is that fat is an inefficient source of energy at higher intensities. The end result is that you must reduce your level of exertion. Effectively, this will have a negative impact on your physical performance.

The point here is that active individuals need to consume a diet that's carbohydrate-based. But not just any type of carbohydrates; select those that offer you plenty of nutrients. In short, use your noodle. Sorry, bad pun.

What about fat? Sure but eat the healthier types of fat. And even then, do it in moderation.

Bottom line: In the battle of the bulge, it's clear that carbohydrate isn't the dastardly villain and fat isn't the de facto hero.

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