

Since When is a Calorie a Calorie?

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The title says it all. At some point in time, a program was implemented that trained people- and I use the term “trained” loosely- to believe that in the end, when our bodies are put in demanding situations, “A calorie is a calorie.” That statement is trumped by one that most everyone has heard since childhood: “You are what you eat.” For many of us in Special Operations Forces (SOF), we had not seriously considered that first statement until we entered the military and even more of us not until we entered the SOF community. Yet to this day, “a calorie is a calorie” is the overused motto thrown about during the training for some of the United States’ most elite forces.

What’s more worrisome is the mentality that is reflected in daily military life both in garrison and while deployed. Why is it that the second statement- “You are what you eat”- is seemingly held in so little regard? After all, most of us heard this statement long before the military may have even been a career consideration. Further validation of “you are what you eat” can be found in other first-world countries; surely people across the globe have similar idioms to describe their dietary habits. If this maxim is established internationally, we then have a worldwide slogan most people learn as a child, and that is significant. “You are what you eat” translates to “the performance you get out of your body is a direct result of the quality of food you put into it.”

Yet day after day, we continually shove artificial products into our bodies, and then throw ourselves in the most demanding physical and mental operational situations possible. The result of this is Soldiers spending a large percentage of their income on nutritional supplements with an underlying deficit in dietary nutrition, leading to an accumulation of excess dietary waste. Essentially, we are becoming a malnourished population of Soldiers who are overcompensating by ingesting artificial substitutes.

Let’s take a moment to define some key words, as this will help clarify some statements that you may come across later in this article- these definitions will also maintain the context of the subject. First, let’s clarify the

term “calorie.” A calorie is the quantity of heat required to raise the temperature of 1 gram of water by 1 °C from a standard initial temperature, especially from 3.98 °C, 14.5 °C, or 19.5 °C, at 1 atmosphere pressure”¹ Calorie, as just defined, is also called the *nutritionist’s calorie*. The take-away message from this definition is that calories give us an estimate of gross energy consumed. It in no way measures the amount of energy used to access the nutrition available. In this instance, my referral to the term calorie: is used in reference to a Kilocalorie, to be more precise.

Accessing available nutrients is what can be called “net calories.” A net calorie is the amount of energy retained for use by your body, after subtracting the energy used for digestion and processing of consumed “material.” I use material instead of food, because a fair portion of our diet is composed of inert, non-digestible products. These are the items that can and do have major effects on bioavailability of nutrition, as well energy consumption of organ tissues. “Inert” is an important concept in nutrition, as it describes materials that are of little to no nutritional value. Also of no nutritional value are toxins. Toxins not only force the body to utilize energy in the digestion and excretion process without nutritional benefit, they have potential for residual aggregation and build-up, leading to negative secondary effects on the body.

In the interest of keeping this article as concise as possible, you can sum up most of what you’re about to read in this short statement: “Eat Simple.” Fancy foods are out of fashion: We should eat what was put on this earth for us. Man-made processed foods have spun out of control, and have now become the mainstay for the average American’s dietary life. Obesity has become a profiteer’s dream: We have reality shows, surgical procedures, and entire industries devoted to reaping the benefits of an obese America. The obesity phenomenon is considered shameful in many other parts of the world, and you’re not likely to find this magnitude of an obesity epidemic in many other countries.

The reality is that obesity is rarely a secondary effect of a particular ailment, but more so the primary effect of

a poor diet, which then brings us to the root cause of nearly all illness. In the military, our bodies are put to the ultimate test; we endure regular physical training, at times accompanied by poor nutrition, extreme conditions, and unforgiving combat environments. Disturbingly, more often than not, SOF is more likely to eat a healthy meal in a third world country than we receive in a military dining facility (DFac). Despite the relative comfort of the DFac, the food itself is a nutritional desert. If you've eaten recently at a Fort Bragg DFac, you can sit anywhere you choose—at times in a nice plush chair- while watching a large-screen TV, or pick an option to sit at a circular bar made of solid wood. There are few chow halls in the Army that rival this level of comfort, but all that flash does nothing for the quality of food served. Despite dedicated employees or the command that oversees these facilities, the food provided is detrimental to our health. The majority of DFac management personnel are well versed in nutrition and many don't agree with the food that they're serving. However, due to military contracts and a few uneducated comment card reviews, they are unable to serve what they would consider a healthy meal to Soldiers who deserve better.

Let's get down to the nitty gritty about things most people don't know- or refuse to acknowledge. Speaking broadly, we must be concerned with the details of the information we receive, even if articles are written with the best of intentions. Unfortunately, the writings are generally geared for readers of the lowest common denominators, and contains poor information that may be misleading. Those publications are not necessarily flaws of the individual nutritionists or sports medicine "experts" that wrote the article, but represents fractures and misinformation within the system that educated them. A good example is the article "On the Go Fuel."² Granted, this article is a bit dated, but it will suffice for providing an example for discussion. Many of the things covered can be directly translated to modern supplements such as energy drinks, or muscle building products such as Muscle Milk®.

To summarize, we will break down a few items from an excerpt of the "On the Go Fuel" article, starting first by addressing what we drink. This article promotes "At altitude or in cold weather, consider drinking these products: Tang, Koolaid, and Nestea." Criticizing Tang may be bordering on blasphemy- after all, it got us to the moon- but let's take a moment to analyze the ingredients. Number one on the list is sugar, which seems benign, but keep in mind this is a huge contributor to one of the major diseases of our time affecting adults and children alike—diabetes. The next item is fructose. Oh wait, more sweetener! The old 1-2 punch; and by the way, there is ongoing investigations that are positively linking Fructose to Mercury poisoning.³ The unfortunate

reality is that people won't drink what they don't like; hence, the rationale behind offering many flavors of milk in our elementary schools.

Citric acid provides tartness, calcium phosphate prevents caking and is used as a stabilizer, potassium citrate controls acidity. . . . But, this takes the cake for Tang ingredients: "orange juice solids." There isn't actually a definition of what this is or isn't, other than the name itself. As far as we know, there aren't any defined standards regulating the composition of orange juice solids. Ascorbic acid (also known as Vitamin C) is used next. Apparently when orange juice solids just aren't quite enough, manufacturers are ready to bump it up to the next level of ridiculousness.

Now we're getting to some good stuff: "natural flavor," which is a generic term that manufacturers use to describe several items such as monosodium glutamate (MSG). There is very little about "natural flavor" that is actually naturally occurring.⁴ We could focus forever just on Tang alone, but we must highlight a few more noteworthy ingredients. Xanthan and cellulose gums (for body) have fancy names, but they're really just variations of sugar, so next is the uppercut missing from that 1-2 combo. Artificial color is an ingredient that falls within the "toxin" category. Artificial color provides no nutritional value, yet forces the body to consume resources in digestion. We can find a hundred articles on the negative effects of artificial color, especially on our children. But wait, there's more: of whatever artificial color is composed, the specifics apparently don't cover Yellow #5 and Yellow #6. So what's really in it? Maybe a conventionally educated nutritionist can demonstrate where these ingredients are mentioned in the food pyramid, but it's unclear why we're still consuming them.

Sadly, the ingredient list from other products doesn't get much better. We inundate our bodies with waste disguised as food, and then wonder why it's necessary to consume such large quantities of it. The writing is on the wall: we're eating garbage and waste like a mangy dog in a yard. If we made educated decisions to eat more nutrient-dense foods, we wouldn't feel the need to consume so much. I once heard a saying from a *raw food* health nut. He said, "Ignore hunger, your body has been misled and doesn't know what it needs." I didn't understand the real meaning behind this at first, and to be honest, thought it was silly. As time went by and I became more educated, I understood the true meaning: our bodies have miraculously adapted to an unforgiving environment. We've been conditioned to consume large portions of food in order to attain the crucial nutrients for life. Below is a food pyramid that provides an excellent foundation diet, I caveat it, however, by saying you can plug in meats and dairies sparingly in the Proteins

portion with the with the knowledge that it must be offset with a larger portion of leafy greens to aid in the digestion and excretion process.



When you begin to consume healthy, nutrient-dense foods, your body must be retrained. Hunger pains will subside with time, but your health will immediately improve, and continue to do so. With that being said, it's the responsibility of those who educate troops- more specifically, medics and corpsmen- to inform your troops about proper nutrition, and responsible dietary considerations. To date, no formal courses are found easily that offer nutritional education from a SOF preventive medicine standpoint. As SOF medics, we have historically been cutting-edge trendsetters in regard to medical and clinical care. Nowadays, it appears we are sitting on our

laurels waiting for the conventional Army to approve what we do, so we won't be held responsible for paving the way. In SOF medicine, we need go-getters that are willing to lead from the front and not just buy time while in key command positions. That being said, as a community of SOF medical professionals, we need to reach out for information, and not commit the fatal error of relying on single-source information (like that from conventionally-educated providers. By starting with the way we eat, we will initiate positive changes in the way we train, fight, and deliver care to our teammates and those who rely on us.

References

1. *Nutritionist's Calorie*. (2012). The Free Dictionary. Retrieved 20 January 2012 from <http://www.thefreedictionary.com/nutritionist's+calorie>.
2. Warfighters' Guide to Dietary Supplements. (n.d.) *TG295: Dietary Supplements Pocket Guide*. Retrieved 18 January 2012 from <https://arsocportal.soc.mil/usasfc/7sfg/med/Nutrition/On%20the%20Go%20Fuel%20Handout.pdf>
3. Dufault, R., LeBlanc, B., Schnoll, R., Cornett, C., Schweitzer, L., Walling, D., Hightower, J., Patrick, L., Lukiw, W. (2009). Mercury from chlor-alkali plants: measured concentrations in food product sugar. *Environmental Health*, 8(2). Retrieved 19 January 2012 from <http://www.ehjournal.net/content/pdf/1476-069X-8-2.pdf>.
4. *ZMSG is sometimes hidden in food with labels that say "No Added MSG," "No MSG Added," and "No MSG."* (n.d.) Retrieved 20 January 2012 from <http://www.truthinlabeling.org/nomsg.html>.