IS A CALORIE JUST A CALORIE

By

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A calorie is just a calorie! Ever wonder why you always hear this from people whom deal with excessive bodyfat issues while defending their appetite for point system based brownies and microwavable dinners (in a plastic container I might add). If a calorie were just a calorie, then why don't most people get fat when eating a diet consisting of high quality fats, proteins, and vegetables, while their counterparts snacking on potato chips, frozen fudge bars, and bagel sandwiches seem to balloon up quicker than a thanksgiving day parade Homer Simpson float.

And to rub it in, have you ever noticed how the people on one of those heavily marketed, diet programs seem to love to brag about the fact that they can eat 6 jelly donuts "today" and still lose the weight, as long as they don't eat anything else for the rest of the day. *"I know how great you feel and how good you look. You have already told me 20 times today how easy the microwave meal and brownie program is working for you. Yes, I know it is so easy."*

But seriously, have you ever wondered what the negative health impacts/consequences may be in eating microwavable plastic meals every lunch and dinner. Or how about eating 50-60% less calories than your body requires or even the negative effects some of the processed ingredients such as modified corn starch, hydrogenated oils, and enriched wheat flour may have on your physical health. Never mind the fact that different sources of calories can have different effects on your body's hormonal balance.

For instance, did you know that a caloric consumption roughly 25-30% below your daily requirement (BMR) may raise cortisol, decrease testosterone, and interrupt thryroid hormone effectiveness. Now that is over just a short period of time, such as a couple of days. Never mind the serious long-term hormonal consequences that may occur when this becomes chronic. Over time, with excessively low caloric consumption your body may actually begin to "eat away" at muscle tissue as it needs energy from somewhere in order to survive.

Second, with chronically low calories, cortisol levels begin to rise. Cortisol is a stress hormone that can signal the body to go into storage mode in order to protect itself from a famine. Well, with the self-induced famine that is upon those partaking in these diet programs, chronically elevated cortisol levels may signal the body to begin storing body fat. That's right, your body will begin to store fat as a protective mechanism, the longer one semi-starves themselves. It is for this reason that many of these diet programs no longer work after 1-2 months, as the dieter has to keep dropping their caloric consumption in order to maintain weight loss.

Alongside the cortisol is the ingredients dilemma one faces upon choosing food sources. Understanding that different macronutrients can illicit different hormonal responses, the food choices we make will then have varying effects on our hormonal profiles. For instance a breakfast consisting of a plain large bagel and a glass of sugar laden orange juice (not fresh squeezed) will elicit a rather large insulin response, quickly overflowing the target cells, and sending much of the remaining blood glucose to be stored as fat.

Bagel Belly

Compare this to a breakfast consisting of a slow absorbing carbohydrate source like steel cut oatmeal along with a quality protein like cage free organic whole eggs (yes, eating the yolk). The steel cut oatmeal will allow for a slow, moderate insulin response, while the eggs may further moderate the insulin response due to their high quality fat and protein content.

Now that we understand that different foods can have different effects on our hormonal profile, a discussion about the potential adverse health effects stemming from the "ingredients" is next in line. When we think of our food, we should think of ingredients from the earth, as mother nature put it on our plates. Thanks to savvy marketing plans by processed food manufacturers, we seem to overlook the fact that much of the food in our grocery store aisles today is processed. Basically the original food is stripped of the good stuff, milled, processed to increase shelf life, then injected with synthetic vitamins, minerals, and "other" ingredients/additives.

Let's look for a moment at the ingredients of one of those supposedly healthy, "lean" microwavable meals, and compare them to the ingredients of something simple and truly healthy, such as sardines. The reason I choose sardines is they are considered by many nutritionists to be a "superfood" in a can.

Microwavable Chicken Club Ingredients

Flatbread Part

Enriched wheat flour ******See Below*******
Water
Soybean Oil*******See Below********
Isolated Oat Product******???******
Yeast
Glycerine
Dough Conditioner (Guar Gym, Calcium carbonate, Datem, Wheat flour, Ascorbic Acid, Enzymes) *****Calcium Carbonate may lead to plaque buildup*****
Salt
Calcium Propionate *****can be toxic to humans with side effects ranging from migraines and stomach aches to depression and irritability*****
Sugar,
Dough Conditioner (Monoglycerides, Calcium Sulfate, Guar Gum, Sodium Metabisulfate, Ascorbic Acid)
Dough Conditoner (Wheat Starch, calcium carbonate, L-Cysteine HCL***)****See below for some info on L-Cysteine*******
Whole Wheat Flour

Cooked White Meat Chicken

White Meat Chicken
Water
Isolated Soy Protein *****Good hiding spot for MSG****!!!! See below for some details on thyroid dysfunction, endocrine disruption, growth of tumors, etc……********
Soy Lecithin
Rice Starch
Sodium Phosphates
Salt
Glazed with: Water, Seasoning (modified food starch, salt, dried garlic, spices, dried onion, citric acid, parsley, hydrogenated soybean and cottonseed oil***)****Yikes. Hydrogenated Oils (AKA: Trans Fats) Funny because they weren't listed on the label. Hmmmm*************
Canola Oil
Maltodextrin
Caramel Color*******Sounds good. But how bad can "Caramel" color really be. See below for details*********

Reduced Fat Mozzarella Cheese

Cultured Milk and nonfat milk
Modified Cornstarch********See below***********
Salt
Vitamin A Palmitate******One would think it is vitamin A, but is it really. See Below**********

Sardines Ingredients

Sardines
Water

Enzymes (An ingredient not in regular mozzarella cheese***)****Can you be more vague********

Tomatoes, Water, Seasoning:

Nonfat Milk Creamer (Sunflower Oil, Corn Syrup Solids, Sodium Caseinate , Potassium Phosphate) ******Sodium Caseinate may contain MSG!!!***
Buttermilk (Buttermilk, Whey, Sodium Caseinate, Lactic Acid***)***Sodium Caseinate may be a good hiding place for MSG!!!***
Modified Cornstarch Cream (Cream, Soy Lecithin***)**Modified cornstarch, again. See Below*********
Whey
Buttermilk Flavor (Maltodextrin, Lactic Acid, Modified food starch, vinegar, buttermilk solids)
Sugar
Flavor (Salt, Maltodextrin, Modified Food Starch, Natural Flavor (contains sunflower oil, smoke) Canola Oil
Dried Garlic
Corn Syrup Solids******Don't worry it is not high fructose corn syrup, but….. See Below*******
Yeast Extract*******Yet another additive which is known to contain MSG********
Potassium Chloride
Salt
Xanthum Gum
Spice******Can you be more vague!! Once again another possible culprit for MSG!!!*******
Lactic Acid
Flavor******Once again can you be more vague??? Yet another possible disguise for MSG!!!*******
Soybean Oil******More Soybean oil…You may feel your estrogen rising just reading this*******
Parsley

Light Pasteurized Process Cheddar Cheese

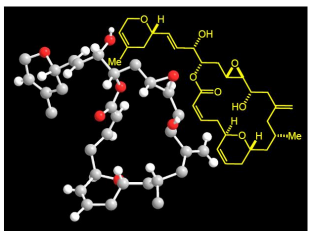
Cultured Milk
Water
Potassium Citrate
Salt
Sodium Citrate
Whey
Sorbic Acid
Cream
Apo Carotenal and Beta Carotene Color*****Gotta love the additional food colorings******
Enzymes******It is amazing that there is no requirement to provide more detail*******
Sodium Phosphate
Lactic Acid (ingredient not in regular pasteurized process cheddar cheese)

Green Onion, Bacon

Water
Salt
Sugar
Sodium Phosphate
Sodium Erythorbate
Sodium Nitrate******Potential Carcinogen****(See Below)***

Vinegar

Isn't it reasonable to expect that the foods we eat contain, well, food. For instance shouldn't the ingredients of peanut butter just say peanuts (and in some cases salt) rather than hydrogenated vegetable oil and dextrose. Or how about the fact that it is recommended that we stay away from red meat, and instead make healthier choices such as high complex carbohydrate meals. The ingredients list of Bison Steak Medallions is one ingredient long: 100% American Bison. Compare this to the ingredients encyclopedia that is the microwavable steak dinner, with complex carbs (served in a plastic container) version. A degree in chemistry may be recommended to understand the ingredients list.



You shouldn't need a degree in chemistry to figure out what you are eating!!!! Let look for a moment at just some of the ingredients of the microwave meal.

Enriched Wheat Flour

What does "enriched" mean? Enriched flour is basically flour in which most of the natural vitamins, minerals and natural elements have been extracted. Manufacturers do this to give the bread longer shelf life, improved texture and deter insects. When you strip the good stuff (germ, bran, vitamins, minerals) the absorption capacity of the wheat is altered. It becomes a highly insulinogenic food, causing a flood of sugar to ones bloodstream. Much of this may be absorbed as in the fat cells, creating the potential for obesity and obesity related diseases.

Calcium Propionate

Calcium Propionate is a mold growth inhibitor used on breads. Manufacturers use this chemical to increase product shelf life. The problem is this chemical can have some side effects in humans including cancerous tumors (Rosenkvist and Hansen 1998) depression, irritability, migraines, stomach issues, skin rashes and sinus problems.

1. Rosenkvist, H., and A. Hansen. 1998. **The antimicrobial effect of organic acid sourdough and nisin against *Bacillus subtilis*Bacillus subtilis and *Bacillus licheniformis*Bacillus licheniformis isolated from wheat bread**. *J. Appl. Microbiol.* **85:**621-631.

Calcium Carbonate

A non soluble form of calcium which has very low if any bio-availability. This type of calcium may lead to buildup of plaque in the arteries (Asmus et al 2005, Braun et al 2004), therefore restricting blood flow. Arthritis, kidney and gallstones, as well as other major health issues have been linked to the plaque buildup caused by non-soluble forms of calcium.

1. Asmus HG, Braun J, Krause R, Brunkhorst R, Holzer H, Schulz W, Neumayer HH, Raggi P, Bommer J. **Two year comparison of sevelamer and calcium carbonate effects on cardiovascular calcification and bone density.** *Nephrol Dial Transplant*. 20(8); Pp 1653-1661. 2005.
2. Braun J, Asmus HG, Holzer H, Brunkhorst R, Krause R, Schulz W, Neumayer HH, Raggi P, Bommer J. **Long-term comparison of a calcium-free phosphate binder and calcium carbonate-phosphorus metabolism and cardiovascular calcification**. *Clin Nephrol.* 62(2); Pp 104-115. 2004.
3. Reginato A, Paul H, Shumacher H. **Crystal-induced arthritis**. *Arch Phys Med Rehabil.* 63(9); Pp 401-408. 1982.

Isolated Soy Protein

Here is an interesting story. In 1995 a study came out touting the immense benefits soy protein can have on heart disease and reducing cholesterol. A branch of a large conglomerate then filed with the FDA to allow for this claim to be made for soy products. The FDA granted the claim and soy was off and running as a health food.

Unbeknownst to the public, was that the 1995 Anderson et al study, printed the ñprestigiousò pages of the New England Journal of Medicine ñMeta-analysis of the Effects of Soy Protein intake on Serum lipidsò was actually funded by the same company that filed with the FDA. Hmmmm, Check out the correspondence study by Krauss et al in the Dec 21 1995 issue of the NEJM. It is called Soy Protein and Serum Lipids, basically debunking the ñresearchò findings of the Anderson et al Meta-Analysis.

So is soy actually good for us. Well, studies have linked it to biological defects (Tuohy P 2003), thyroid dysfunction (Doerge and Sheehan 2002), endocrine disruption (Roy et al 1998), growth of tumors (Allred et al 2001), impaired immune function (Yellayi et al 2002), breast cancer (Peeters et al 2003), and maturation issues (Zung et al 2008). Sounds pretty healthy. Makes you want to go out and buy a soy bar! (Note: when soy products are fermented properly, such as Tofu and Tempeh, the health benefits increase while the negative impacts can decrease).

1. Anderson J, Johnstone B, Newell-Cook M. **Meta-Analysis of the effects of soy protein intake on serum lipids.** *New England Journal of Medicine.* 333 (5); Pp 276-282. 1995.
2. Krauss M, Chait A, Stone N. **Soy Protein and Serum Lipids. *New*** *England Journal of Medicine.* 333; Pp 1715-1716. 1995.
3. Zung A, Glaser T, Kerem Z, Zadik Z. **Breast development in the first 2 years of life: an association with soy-based infant formulas.** *Journal of Pediatric Gastroenterology and Nutrition.* 2008 Feb;46(2):191-5.
4. Peeters PH, Keinan-Boker L, van der Schouw YT, Grobbee DE. **Phytoestrogens and breast cancer risk. Review of the epidemiological evidence.** *Breast Cancer Research and Treatment.* 2003 Jan;77(2):171-83.
5. Yellayi S, Naaz A, Szewczykowski MA, Sato T, Woods JA, Chang J, Segre M, Allred CD, Helferich WG, Cooke PS. **The phytoestrogen genistein induces thymic and immune changes: a human health concern?** *Proceedings of the National Academy of Sciences of the United States of America*. 2002 May 28;99(11):7616-21
6. Allred CD, Ju YH, Allred KF, Chang J, Helferich WG. **Dietary genistin stimulates growth of estrogen-dependent breast cancer tumors similar to that observed with genistein.** *Carcinogenesis.* 2001 Oct;22(10):1667-73.
7. Roy D, Colerangle JB, Singh KP. **Is exposure to environmental or industrial endocrine disrupting estrogen-like chemicals able to cause genomic instability?** *Frontiers in Bioscience.* 1998 Aug 6;3:d913-21.
8. Tuohy PG. **Soy infant formula and phytoestrogens.** *Journal of Pediatrics and Child Health***.** 2003 Aug;39(6):401-5.
9. Doerge DR, Sheehan DM. Goitrogenic **and estrogenic activity of soy isoflavones**. *Environmental Health Perspectives.* 2002 Jun;110 Suppl 3:349-53.

L-Cysteine

Not a chemical, but can come from surprising sources such as animal fat or human hair.

Hydrogenated Oils (Trans Fats)

Basically a reconfiguring of the of the hydrogen/carbon bonds which creates a more viscous oil and a fat that can be held solid at room temperature. This makes for a much easier cooking experience. But at what cost? These fats have been shown to increase LDL while lowering HDL (Mozaffarian 2006, Teegala et al 2009, Willet 2006, Jakobsen 2006) , increase the potential for clogging of the arteries which may increase the risk of heart disease, and increase potential for insulin resistance. Makes you want to eat a stick of margarine, even though animals or insects

won't eat it. Try it for yourself. Put an unwrapped stick of margarine in a dumpster on a hot summer day, or outside near the woods, and see if any animals will eat it. We tried it, and not even the fly larvae (maggots) would touch it! It is amazing that humans are the only animals convinced that this is an edible food source.

1. Mozaffarian D, Aro A, Willet W. **Health effects of trans-fatty acids: experimental and observational evidence**. *Eur J Clin Nutr*. 63; Pp S5-21. 2009.

2. Teegala S, Willet W, Mozaffarian D. **Consumption and health effects of trans fatty acids: a review**. *JAOAC Int.* 92(5); Pp 1250-1257. 2009.

3. Mozaffarian D. **Trans fatty acids-effects on systemic inflammation and endothelial function**. *Atheroscler Suppl.* 7(2); Pp 29-32. 2006.

4. Willett W. **Trans fatty acids and cardiovascular disease-epidemiological data.** *Atheroscler Suppl.* 7(2); Pp 5-8. 2006.
5. Jakobsen MU, Bysted A, Andersen NL, Heitmann BL, Hartkopp HB, Leth T, Overvad K, Dyerberg J. **Intake of ruminant trans fatty acids and risk of coronary heart disease-an overview**. *Atheroscler Suppl.* 7(2); Pp 9-11. 2006.

Caramel Color

Did you know that caramel coloring has been used to suppress immune function in mice by disrupting white blood cell production (). I guess mice don't react well to burnt sugar.

1. Thuvander A, Oskarsson A. **Effects of subchronic exposure to Caramel Colour III on the immune system in mice**. *Food Chem Toxicol.* 32(1); Pp 7-13. 1994.

Modified Corn Starch

What do you do if you want to make a food harder to break down in the stomach and intestines? Simple, you modify it. Modifying basically refers to chemically treating it to alter the physical properties so it can be used as a food thickener or moistener, basically to improve texture. Besides ingestion of treatment chemicals, modified starches may lead to gastrointestinal or bloating issues.

Vitamin A Palmitate

Not to be confused with the healthy vitamin A found in cod, liver, and cold water fish, Vitamin A Palmitate requires a very healthy gut mucosal villi surface to breakdown and absorb.

MSG

Monosodium Glutamate. What is the point to this additive, besides, perhaps making people want to eat more? Did you know that when scientists need to make a mouse or rat fat for an experiment they inject them with, you guessed it, a chemical form of MSG (Xiong et al 2009, Luz et al 2009). It can cause a threefold increase in the production insulin. If it has this effect on rats, what is the human cost?

As the public has become more aware of the dangerous effects of MSG, it still seems to find it's way into "foodstuff" under different identities or by disguising itself. Rather than using the name Monosodium Glutatamate, it may fall under the disguises of Hydrolyzed Plant Protein or Plant Protein Extract. Sounds harmless, or even healthy right? Or how about Yeast Extract or Sodium (or calcium) Caseinate. Pretty scary stuff. For a complete list, try searching the internet for food additive that contain MSG.

Some food additives that may contain or even be MSG in disguise

Hydrolyzed vegetable /plant proteins or plant protein extracts
Hydrolyzed Oat Flour
Yeast Extract
Soy Protein Isolate/Concentrate and Whey Protein Isolate
Sodium or Calcium Caseinate
Malt Flavoring or Extract
Enzymes
Corn Oil
Flavoring and Natural, Chicken, Beef Flavoring
Corn Oil
Spices and Seasoning

1. Xiong J, Branigan D, Li M. **Deciphering the MSG controversy.** *Int J Clin Exp Med.* 2(4); Pp 329-336. 2009.
2. Luz J, Pasin VP, Silva DJ, Zemdegs JC, Amaral LS, Affonso-Silva SM. **Effect of food restriction on energy expenditure of monosodium glutamate induced obese rats.** *Ann Nutr Metab.* 56(1); Pp 31-35. 2009.

Corn Syrup Solids

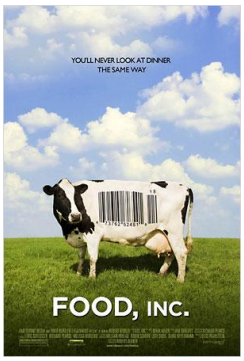
Manufactured from corn syrup liquid, this is basically a precursor to high fructose corn syrup, minus the enzymatic process which converts the dextrose to fructose.

Sodium Nitrate

Sodium nitrate is basically used for dried cured meats. It breaks down into nitrite, which can then lead to the formation of nitrosomes, which are potential carcinogens.

Never mind the fact that the microwave meal is also being exposed to high heat in a plastic container, with a clear plastic sheet over the top. One has to wonder if this can be healthy. After all, would you cook that same meal in the same container in a regular oven. Probably not, due to the fact that the plastic would melt all over the food, and then you would be ingesting it. With that said, isn't there a chance that the same plastics, only this time microwaved, may also leech into our food. Just because the container is not melting does not mean the potential for leeched plastics in our food does not exist when eating these microwavable "meals".

So in all, it is wise to know where your food comes from, what is actually in it (including hidden additives), and most of all make wise decisions regarding your health. For an excellent 4 star movie on the topic of our food, check out the 2009 highly acclaimed Food Inc. This movie can be such an eye opener to the general public about where our food comes from. In fact, there is video online in which one of the new organizations interviews food industry lobbyists regarding this movie. The lobbyists explain that they don't want this movie to be shown in our schools, as they feel they should be the ones to educate our children on proper food choices. Hmmm.



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