Things in nutrition that confuse me - Calories in / Calories out

Disclaimer: *To start, this is a living, breathing document. Think of it as someone jotting down notes to verify them in the future. The grammar is poor the spelling is suspect, it's a work in progress.*

As an engineer I plan to post facts based evidence. If my initial facts are proved wrong, I will update this document to reflect those changes. This document should in no way be taken as suggestions, advice, a medical opinion, or any form of authoritative information. In fact, what works for me could possibly not work for you. Don't do what I do, do what works for you. Do your research, be informed, make your own decisions and again do what's best for you.

So the concept goes, in order to lose "weight" you must create a deficit in your daily caloric intake. In simple terms, what you eat over the course of the day must be less then what your body needs. Only then will you lose weight. On the surface sounds pretty straight forward but things get complicated awful fast.

Easy numbers lets say I'm 200lbs. If we do a bit of searching, 1200[2] for women and 1800[1] / 1500[3] men in many, many, many different places. According to numerous sources this is absolute bare minimum for calories intake. problems start to kick in. BMR, Basal Metabolic Rate = number of calories your body needs to consumer per day. It's created w/ gender, height, weight, and age. If we plug in my numbers BMR of 1899.

first issue. If we go with the 1800 I only need 99 more calories to survive. If we go with the 1500 that means I need an additional 399 cals. Same sites that just gave me above numbers also say that to lose weight should look to create 500 cal deficit to lose ~1 lb a week. In both cases means to lose weight would need to go under the suggested lowest value. Many have argued BMR is not all that accurate. fair enough. own workouts to see what type of usage I'm seeing.

Last run was only a mile, part of a brick, will provide excellent numbers. According to Garmin HRM burned 132 calories. If we subtract workout from 500 you get 368. Means only need to cut 368 cals out of diet to lose pound a week. (ignoring the bike calories, easier for now) So for one week I run for one mile at the same exact pace each day , cut the 368 out of my diet and wait for the pounds to start dropping each week. weight stops coming off. Why, in a deficit? Reason? by end of 1st week body has adapted to running, now more efficient. No longer burning through all 132 calories. Again quick web search will provide info as to why this occurs.[5] But how much does it change? no one really knows, just too many variables. Temperature, humidity, wind, sleep, caffeine intake, stress, and on and on the list goes.

What if up mileage to 2miles everyday. That will be 264 burned. Well if I'm that close I'll just add one more mile and cover all my deficit in just exercise and be able to eat the full 1899. Scenerio: friend challenges you to 5K race. You show up and find course is not flat like yours. End up burning more then the 396 cals b/c course is harder. Burned how much? you are hungry because you are way under the 500. But how many cals under? Also I hate to bring this up but, if you do the same course for a month, you won't be burning the 396+ anymore. So unless you become like a lab rat and pay to have all kinds of testing done there really is no way of knowing just how many calories each of your runs is using up. So to keep up the deficit do continue running 3 miles, cut back on eating, or give up?

past weekend rode 60+ miles, according to Garmin, burned over 3000 calories. Now what? Want to lose weight so I need to be 500 cals short. A little math. 1899 + 3000 = 4899 cals – 500 for a deficit = 4399. Lets take away breakfast of 800 and that leaves us 4399 – 800 = 3599. Or about 1200 cals for another 3 meals. Seriously who has time to figure this all out? And I've just figured out the total cals, haven't even touched on protein requirements, and all the rest. Making things worse the next day I do a core workout which none of my watches will be able to calculate calories for me. Now what?

Been told in past it's my fault - blame yourself for not being a good dieter. Or should I say calorie restriction-er. Sadly this is what many people are told and many believe when in fact dieting doesn't work[6]. Sounds familiar? Do all the above calculations like I did above, diligently stick to the deficit and the weight starts to drop. But slowly, but surely things grind to a halt. Not only that now feeling worn down and now the weight starts to come back on with alittle extra for good measure. further evidence check out the people from the biggest loser tv show. Most (last time I checked[7]) if not all have regained most of their weight. I'm sorry but dieting, for me at least, and apparently for a lot of other people as well, doesn't work. But don't take my word for it, pull up your favorite search engine and type in "dieting doesn't work". The results will absolutely shock you. Ted talks, UCLA research, fitness magazines, news outlets and medical sites all tell you the same thing. Diets don't work. Restricting your calories doesn't work.

So why are so many people still suggesting this as a viable method for weight lose?

Reference material
1. https://www.livestrong.com/article/300423-approximately-many-calories-survive/
2. https://www.shape.com/healthy-eating/diet-tips/10-things-you-dont-know-about-calories
3. https://www.livestrong.com/article/310517-minimum-amount-of-calories-needed-per-day-to-survive/
4. https://www.active.com/fitness/calculators/bmr
5. https://www.newscientist.com/article/2075721-our-body-adapts-to-intense-exercise-to-burn-fewer-calories/

6. https://health.usnews.com/wellness/articles/2016-03-04/the-3-biggest-reasons-your-diet-isnt-working
7. https://www.health.harvard.edu/diet-and-weight-loss/lessons-from-the-biggest-loser