

FEMME FATALE *Physique*



Turning Your Body into a Calorie Burning Machine

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You know the old adage, all that matters is calories in versus calories out. If you eat the exact same number of calories that you expend, you won't gain or lose weight. Well you know as they say at the Oscar Mayer plant, boloney! Hopefully, the notion that all calories are created equally will be squashed quicker than a Sumo wrestler eats a California roll.

In fact, there is some pretty darn good evidence that you can increase muscle mass and decrease fat mass without decreasing calorie intake. You must be thinking, Antonio is just off his rocker. You mean I can EAT the same amount of calories and still look as purrrty in a swimsuit? You had me a EAT the same amount of calories. Read on my brethren.

There may be few exceptions to the looking purrrrrty rule when it comes to eating. For instance, sumo wrestling^{1,2} need to carry a lot of body weight and it don't matter if he has a six-pack or a full keg. Also, long-distance open water swimmers carry quite a bit of subcutaneous (under the skin) fat that may indeed help swimming performance, particularly in cold environments, due to the insulation provided by subcutaneous fat.³

Nonetheless, achieving a lean physique can only help performance in 99% of all sports. So before you decide I'm making all of this up, let me summarize for you a recent study showing why certain calories are better than others. In fact, in the last two years there has been at least a dozen studies showing that you can improve body composition by merely taking our carbohydrate calories and replacing it with protein calories.

A Calorie Ain't A Calorie

A study from the University of Illinois at Urbana-Champaign looked at the efficacy of two weight loss diets. They both had the same number of calories except one diet was high protein the other was high carbohydrate. After consuming the diets for 10 weeks, the protein group lost 13% more weight than the carbohydrate group. The protein group also lost more fat and less lean body mass. Both groups had significant reductions in serum cholesterol (approximately 10%), whereas the protein group also had significant reductions in triacylglycerols or triglycerides (-21%) and the ratio of Triglycerides/HDL-cholesterol (23%). Thus, not only does eating more protein result in a better looking body, it results in better internal health.⁴

Why are protein calories treated differently?

The *metabolic advantage* in low-carbohydrate diets (i.e. greater weight loss compared to isocaloric [same total calories] diets of different composition) can be explained in large part by the enhanced thermogenesis (seen with low carbohydrate diets); what this means is that

protein foods jack up your metabolic rate more than carbohydrate foods. Scientists term this the thermic effect of feeding or TEF. Also, restricting carbohydrates, especially processed and high glycemic carbohydrates, improves hormonal balance (e.g. insulin) and increases the ‘turnover’ of your body’s proteins.

Meal Frequency

To improve your physique, should you eat the ‘traditional’ breakfast, lunch, and dinner. Or, should you eat frequent small meals throughout the day? According to one study, increased meal frequency had a positive effect on boxers. In this study, twelve boxers were divided between a two meals day (2M) and a six meals day (6M). Both groups ate about 1,200 calories daily for two weeks. They found that the group that ate 6 meals per day maintained more lean body mass during the diet period than the group that ate only 2 meals per day. And remember, they ate the same number of calories!

Protein Supplementation Plus Exercise

How many times have you heard this refrain. “Supplementing with protein is a waste of time; as long as you eat a balanced diet...blah blah...you don’t need to supplement.” Yeah, and if we all exercised regularly we wouldn’t be a nation of fat behinds watching ESPN and Fox News. Let’s face it, unless you eat perfectly all the time, it makes complete sense to use supplements, whether it’s a multivitamin, protein powder, or essential oils.

In fact, those protein bars that Americans are fond can improve your body composition. In a study of experienced weightlifters with at least 1 year or more experience, they were given daily servings of micronutrient-fortified protein bars containing soy or whey protein. This was an extra 33 grams of protein per day. Each subject was instructed to consume three bars per day for the 9-week training period. Their daily diet was otherwise not altered. The strength training protocol was three sets of 4–6 repetitions for 14 exercises that targeted major muscle groups. According to the authors, “soy and whey protein bar products both promoted exercise training-induced lean body mass gain.”⁵

It should be mentioned that many clinicians claim that ‘high protein’ intakes may have deleterious effects; unfortunately, this has no basis in fact.

Take Home Message

If you want to improve body composition:

1. Take out junk carbs (processed types like breads and pastas) and replace them with protein foods.
2. Eat small frequent meals throughout the day.
3. Supplement with protein.
4. Eat plenty of unprocessed vegetables
5. Exercise like you mean it.
6. Have Discipline! (Do what’s good for you even when you don’t want to do it!)

References

1. Kanehisa H, Kondo M, Ikegawa S, Fukunaga T. Characteristics of body composition and muscle strength in college Sumo wrestlers. *Int J Sports Med.* Oct 1997;18(7):510-515.
2. Kanehisa H, Kondo M, Ikegawa S, Fukunaga T. Body composition and isokinetic strength of professional Sumo wrestlers. *Eur J Appl Physiol Occup Physiol.* Mar 1998;77(4):352-359.

3. Frisch RE, Hall GM, Aoki TT, et al. Metabolic, endocrine, and reproductive changes of a woman channel swimmer. *Metabolism*. Dec 1984;33(12):1106-1111.
4. Layman DK, Boileau RA, Erickson DJ, et al. A reduced ratio of dietary carbohydrate to protein improves body composition and blood lipid profiles during weight loss in adult women. *J Nutr*. Feb 2003;133(2):411-417.
5. Brown EC, Disilvestro RA, Babaknia A, Devor ST. Soy versus whey protein bars: Effects on exercise training impact on lean body mass and antioxidant status. *Nutr J*. Dec 8 2004;3(1):22.