



less effective. Once this occurs, switch to the karvonen formula which accounts for resting heart rate.  $(220 - \text{age} - \text{resting heart rate} \times \% + \text{resting heart rate})$  As mentioned earlier, we will do cardio like we lift- intense! This will maximize our hormonal response and burn the most energy. HIT cardio (interval cardio which peaks at 90% max HR then allows for 1-2 minutes recovery) is also extremely difficult for the body to adapt to, especially if you are monitoring your heart rate. One of the biggest fallacies out there is that HIT cardio causes muscle loss. It is precisely the OPPOSITE! Excessive long slow duration cardio is the ticket to losing muscle, not HIT.

### Resistance Training

A big mistake that beginners make is starting to lighten up their load as their weight decreases. Avoid this-- muscle loss will result. Continue to train heavy in the 4-8 rep range for at least a few sets along with your standard hypertrophy training. For a complete resistance training protocol, check out the article "Optimally Training for Muscle Hypertrophy" in the Spring 2011 issue of this magazine.

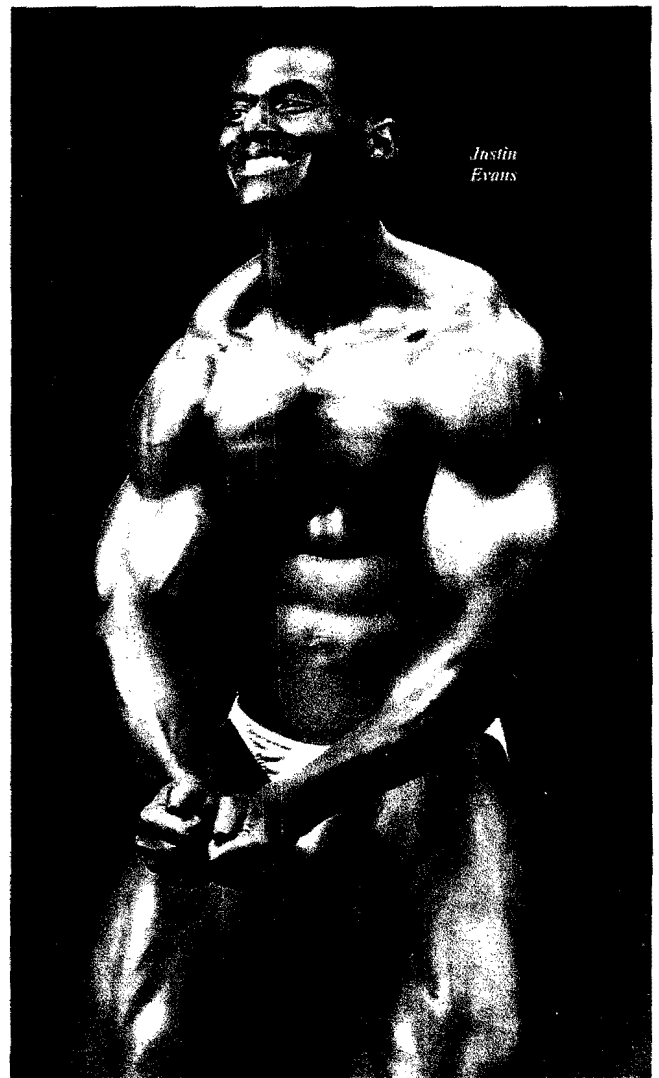
### Sleep

Entire books have been written on this topic along with hundreds of peer reviewed research. If I had a contest prep secret weapon, sleep would be it. A good night sleep is more powerful than any workout, supplement, or even drug that you can take! If you are not getting 7-10 hours of quality sleep per night, then you are not losing fat, end of story.

When you break it down, it is no wonder that an athlete under too much stress is not losing fat! As a matter of fact I would be very concerned about muscle loss. The hardest task that a contest preparation professional has to do is get an athlete to understand that less is more, particularly when it comes to cardio. Of course in the matter of sleep and nutrients, more is more.

### Cardiovascular Training

In an ideal contest prep, cardiovascular activity such as treadmill, elliptical, bike etc etc. would be kept minimal, especially since we are getting huge heart rate responses with our squats and deadlifts. Have you ever noticed where your heart rate is after an intense set of deep squats or deadlifts? IF you need to obtain extreme levels of conditioning, like a bodybuilder does, then a cardiovascular protocol may be a decent addition to your contest prep protocol. Remember that in adding cardio in any



Weeks to show	% heart rate	Sample Cardio Vascular Protocol (6-8 weeks out)			Notes
		Peaks	Sessions per Week	Cool Down Period	
8	85%	8	2	10 min	Cool down done at 50% max HR
6	85%	10	3	10 min	Cool down done at 60% max HR
4	90%	8	3-4	15 min	Cool down done at 60% max HR
2	90%	10	4	20 min	Cool down done at 60% max HR

form you are adding additional stress to your prep. Below is a cardio vascular schedule that can be started at 6-8 weeks out if your conditioning is not on point. Initially using the standard  $220 - \text{age} \times \%$  formula will be adequate. As your body increases its stroke volume (amount of blood pumped per heartbeat) then your resting heart rate will become substantially lower, making your cardio sessions

## Supplementation

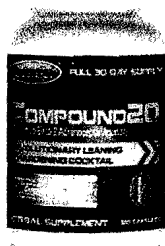
Here is another topic that deserves an entire article. The below chart will outline the top supplements that give you the most bang for your hard earned buck. There are others out there that may be effective, but here are the essentials.

Supplement	Function	When to take	Dose	Notes
Creatine monohydrate	Muscle hydration, strength, muscular endurance	Anytime	5-10 g daily	Regular creatine monohydrate, no bells or whistles
BCAA (leucine, isoleucine, valine)	Increased recovery, protein synthesis	During training; between meals on off days	1 g total BCAA per 10 pounds of bodyweight	Choose a BCAA product that has a 2:1 ratio between leucine and the other BCAA's
Fish Oil (EPA/DHA)	Reduce inflammation, joint health	With breakfast	1600-3200 mg total EPA/DHA	Carlson Labs makes a very pure fish oil
Whey Protein	Increased recovery, protein synthesis	As needed; post workout	varies	Avoid cheap concentrates from brands you do not trust
L-Glutamine	Increased recovery, may increase growth hormone	Before bed or with BCAA's	5-10 g daily	Some BCAA products will include the l-glutamine in it.
Yohimbine	Fat loss, only take if absolutely needed.	20 minutes prior to cardio or workout	2 mg per kg/bw	Very potent and may cause severe contraindications in some people.

## In Conclusion

You now possess the knowledge to put together a nutrition protocol to get on stage this year! Of course be sure to perfect your posing and hit it hard in the gym. Remember there are no magic, one size fits all formulas or numbers that will work for all athletes. Adapting your program over time with trial and error will perfect and individualize your prep.

*Jesse and Jennifer Dale own Scientific Exercise Training Team. SETT provides complete contest preparation guidance from posing, training, diet, and supplementation. Our goal is to introduce you to our team, share exercise theory and practice that you can apply to your current routine, and assist you in reaching your potential as an individual. Whether that entails you stepping on stage for the first time, losing fat, gaining muscle, improving flexibility, or simply maintaining your current results, one of our enthusiastic team members will be glad to help. We are SCIENTIFIC EXERCISE TRAINING which means that our philosophy and nutritional programs are tried and true without the hype and empty promises that you see too often in this industry. When you hire one of our team members, you get the knowledge and support of the entire team put to work for you. After numerous years of competing, judging and promoting within the bodybuilding world, we have developed many proven contest preparation programs, which have yielded success for many competitors. Jesse and Jennifer Dale can be contacted at [jesse@sett2win.com](mailto:jesse@sett2win.com) or via [sett2win.com](http://sett2win.com).*



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Calculating your re-saturation number will take some trial and error. A conservative place to start would be 7-9 g of carbohydrate per kg of lean bodyweight. It is important to note that re-saturating glycogen stores is most optimal when the muscle glycogen is severely depleted.

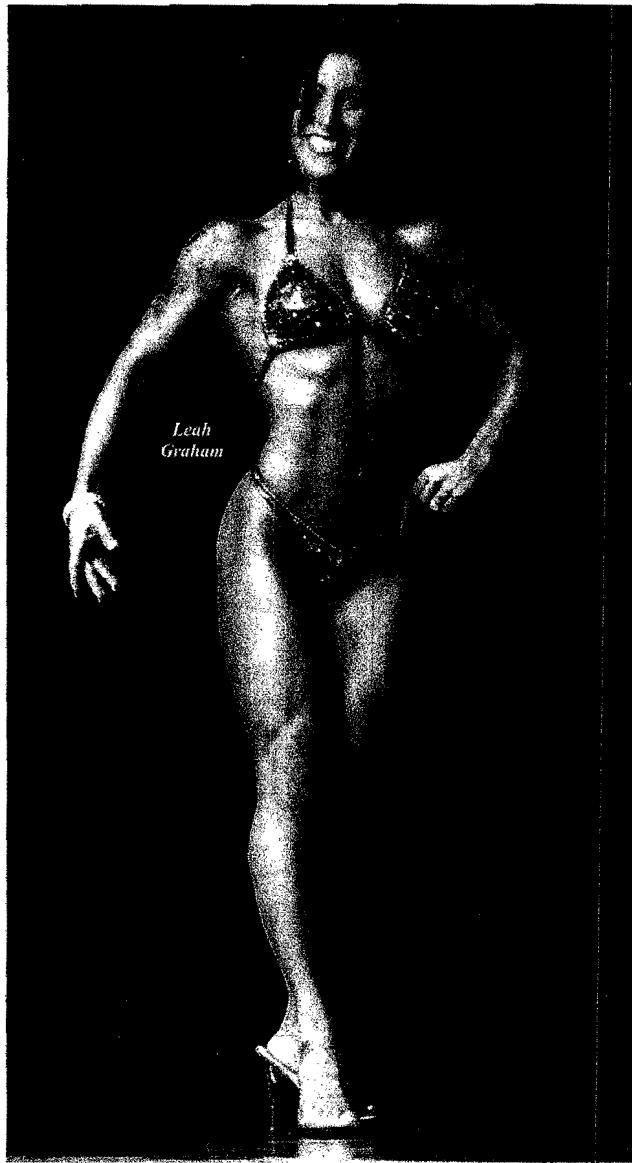
It is important to point out that if you are doing bikini, in which an extreme level of conditioning is not optimal, or if you are seeing great results on your original plan, then it could hurt things more than help by implementing one of these strategies. Resist the urge to do something just for the sake of making a change.

### Overlooked Dieting Pitfalls

Earlier we touched on the subject that fat is not lost by simply reducing calories, but instead by managing hormones to partition nutrients where we want them to go. Hormones run the show, period. If your cortisol and insulin are chronically elevated then it doesn't matter what you do. Under this condition your nutrients will be partitioned towards fat- end of story. The opposite is true if your cortisol and insulin levels are normal and your testosterone and growth hormone are abnormally elevated. In this case you can eat jelly donuts three times a day and look hard as a rock because these nutrients will be partitioned towards oxidation or stored as glycogen. A scenario I see all too often is that of an athlete who is taking in way too little nutrients, doing two hours of cardio per day, has a nine hour + work day, cares for her 2 children, drinks two sugar-free Monsters and a fat loss stack daily while getting a mere five hours of sleep per night and has not lost a pound in the past month. This very common scenario more than substantiates the fundamental flaws supported by those who uphold the calorie theory. The issue with this athlete is too much STRESS.

### Too Little Nutrients

Not giving your body the nutrients that it needs (calories, minerals, vitamins) will slow metabolism, blunt anabolic hormones such as growth hormone and especially testosterone, and **mainly** cause stress on the systems of the body. Recall that cortisol is a healthy hormone that is released in response to STRESS.



**Long Slow Duration Cardio**  
Delving into this topic would take a totally separate paper; however there are 2 issues with large amounts of cardio. The first is the prolonged STRESS and the second is a blunted anabolic hormonal response. We all know that intense resistance training is optimal for anabolic hormone release. Why would cardio be any different? When it comes to contest preparation and managing stress, short intense cardio is by far the way to go. We have all heard the analogy before, but allow me to point it out one more time. Do you want to look like a world class sprinter with regards to muscularity or a marathon runner?

### Demanding Job

I personally work seven days per week, most holidays, and average 9-12 hour shifts- and I love almost every minute of it! However I am not kidding anyone if I were to say that my job is stress free. Our careers involve such normally stressful situation like encountering and dealing with day to day challenges, deadlines, quotas, etc. This

can be a positive stress but it is stress nonetheless. Think of how much more stress I would be under if I hated my job!

### Personal Life

I love my wife, family, friends and my mom who is slaved over proofreading this article more than life itself, but I would be the world biggest liar to say that all these people do not pose stressful situation on a daily basis. Much of the stress is positive, such as traveling five hours to my hometown in Michigan for a birthday party and trying to squeeze 36 hours of visiting various relatives into 12 hours. Some is not as positive, such as visiting a sick friend or attempting to retrieve my escaped dog from our neighbor's yard in the rain. The stress of day to day living, you gotta love it!

### Stimulants

While it is true that caffeine among other substances can assist in our fat burning efforts, they also have a profound effect on our nervous system. Excessive amounts can cause,-- you guessed it-- higher than normal amounts of stress on our systems. A typical energy drink contains 200 mg of caffeine. Stack that along with your morning cup of coffee, a diet cola, and your fat loss stack and you are easily look at a full 1000 plus mg of stimulants per day!

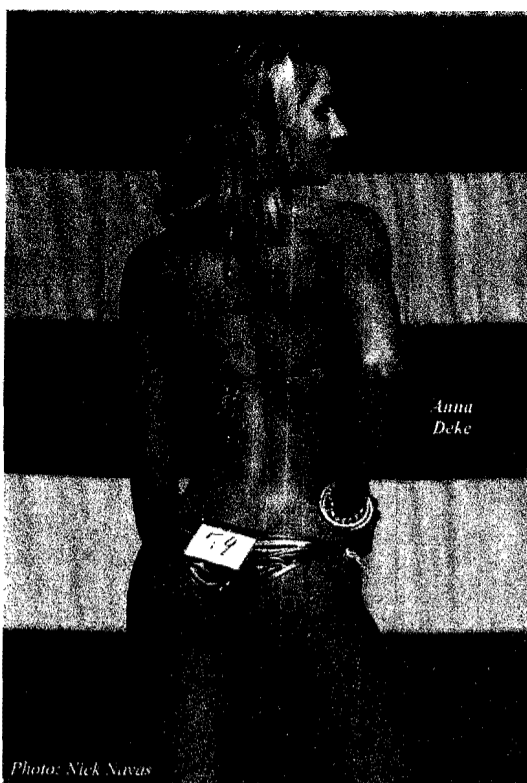


Photo: Nick Navas

Is your body fat not moving and the scale is stagnant? This can mean an adjustment in your carbohydrates and possibly total energy intake needs to be done. Are you losing strength and appear lethargic and flat? This can indicate an increase is warranted in carbohydrate. Remember that macronutrients are signals, so you want to look at the signals that they send and link that to what may be hindering your progress. Sometimes it may simply be that you overestimated your caloric consumption at the beginning and a 200-300 calorie reduction will get you back in the game. Other times you may be eating an item that you are forgetting to log such as something in a supplement, energy drink, etc.

### Re-feeding & Re-saturating

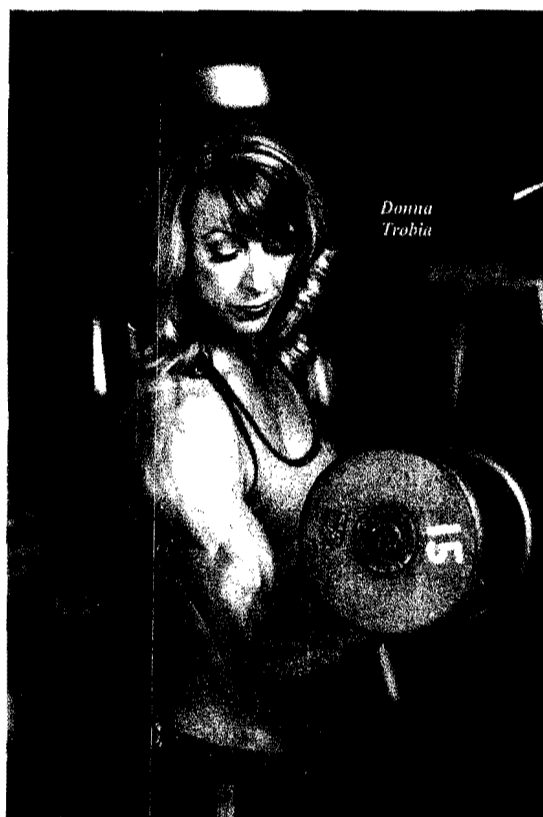
Depending on several factors, an athlete may need to take their carbohydrate levels and/or total energy intake far lower than normal. This can result in a few issues, such as a rapid decline in anabolic hormones, decrease in leptin production, blunted metabolism, depletion of glycogen stores, lowered T3, and host of other catabolic cascades. A popular way to prevent this is to add one or two re-feed days into your protocol. Re-feeding may temporarily reverse some of the negative conditions with very low energy intake dieting. Unfortunately little research has been conducted on re-feeding in the short term. Most studies have subjects re-feed for several days or weeks. At the very least, the re-feed will allow temporary 'relief' from the diet. The re-feed should consist primarily of carbohydrate with some fat. For athletes with very fast metabolisms or large amounts of muscle mass, a more aggressive re-feed can be implemented. This is what I call a re-saturation meal. Re-saturation meals are geared towards replenishing depleted glycogen stores. Remember the two storage sites for glycogen are the liver and skeletal muscle. Re-saturation meals are primarily carbohydrate with trace fat and can include up to 900 g of carbohydrates

depending on the muscle mass of the athlete. If you decide that you are a candidate for re-feed meals or re-saturation meals it is important that you factor them into your macronutrient distribution and caloric average. Here are some guidelines to determine if a re-feed or re-saturation meal is an option that should be incorporated into your prep:

### Re-feed If

- you are on pace or ahead of schedule, but the psychological effects of energy restriction are taking their toll on you
- you have a Strong, consistent craving for carbohydrates
- you have a Fair amount of muscle mass, but your strength is starting to decline
- you Have a fair tolerance to carbohydrates
- you are a figure athlete or bodybuilder who weighs less than 175 and who has stalled out (fat loss has ceased)

Remember that caloric intake on re-feed days should total around where your maintenance was when you did your two week tracking to determine your maintenance level of calories. (For our figure athlete, this was 2100 calories)



### Re-saturate if you

- are far ahead of schedule (6-7% bodyfat for men, 10-11% for women)
- lose fat relatively easy
- maintain a higher than average degree of muscle mass
- tolerate carbohydrates very well
- tend to be geared towards very muscular bodybuilders or highly muscular figure athletes.

set out an excellent *starting point* for each. Let's return to our previously referenced figure athlete. To quote Dr. Volek in his book "The Art & Science of Low Carbohydrate Living," optimal protein intake for humans is 1-2.5g per kg of bodyweight. Since physique athletes put a significant amount of emphasis on muscle breakdown or damage during our workouts, it may be a good idea to lean toward the higher end of that range. Another factor to consider: protein is used to help grow and rebuild not only muscle, but hair, nails, damaged skin, etc. Thus I suggest we remove the amount of fat we carry on our frame and use lean body weight for this equation. If we assign 2.5 g of protein per kg of **lean** (minus fat) bodyweight for a figure athlete weighing 152 lbs at 18.6% body fat-- then her lean bodyweight would be 123.75 lbs (150 - 19%) or 56.25 kg (1 kilogram is 2.2 pounds). This  $56.25 \times 2.5g = 140.625g$  (say 140.5) of protein per day, or approximately 562 calories ( $140.5 \times 4$ ) of her 1,500 calories assigned to protein requirements.

Now the real controversy can begin. According to Dr. Atkins or Dr. Volek, the majority of the remaining energy should come from fat. Dr. Ornish or the FDA would recommend that the majority of the remaining energy should come from carbohydrates, leaving as little as 10% of the remaining energy for dietary fat. So what do you do? As I mentioned earlier you may have to tweak these recommendations to fit you-- luckily you will have the time to do so by following the recommendations earlier with regard to how long your diet should be. I do not want to undermine the importance of dietary carbohydrates, but keep in mind that carbohydrates are not 100% essential. We can sustain life without them, but fats do drive our anabolic hormones. We will move directly to fat intake recommendations. A conservative number that many athletes can begin with would be 20% of total caloric intake. In our ongoing example for our figure athlete, this would be 20% of 1,500 (300 calories), and  $300/9g = 33.3$  grams of dietary fat. This leaves ( $1,500 - 562 - 300$ ) 638 calories or 159.5 g of carbohydrates per day ( $638/4g$ ). Thus the diet of this athlete consists of: 1,500 total calories: 140.5 g protein, 159.5 g carbohydrate and 33.3 g fat.

### Evaluating Progress

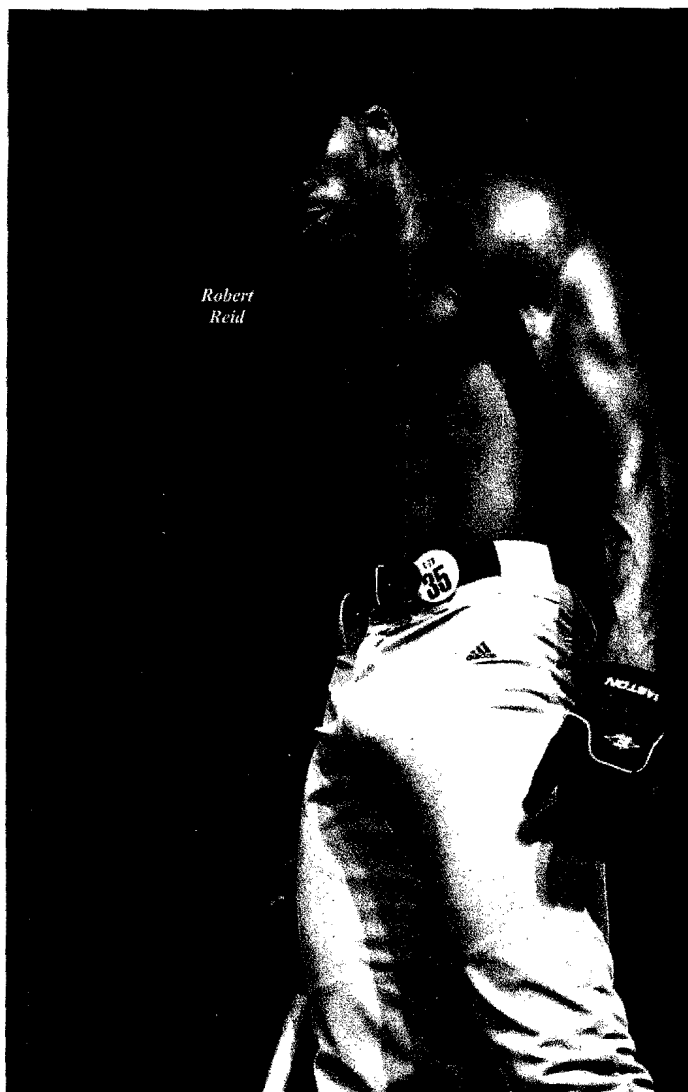
Patience is a huge virtue in contest preparation. The body will not lose fat in a linear fashion, and therefore doing progress checks too frequently can be not only disheartening but also may not show you the big picture of how your diet is really going. I recommend re-evaluating your program about 1/3 of the way into your prep. This would be at the 4-week mark for 12-week prep. If possible, it is best to have a neutral, unbiased person give the evaluation because athletes tend to see all of the bad and none of the good or vice versa. A few of the metrics that should be evaluated are:

- Have you tightened up in the mirror?
- How are your energy levels?
- Has your body fat dropped?
- Is the scale weight on point?
- Strength analysis of the major lifts (chest/shoulder press, squat, deadlift, pull downs) Are they increasing?

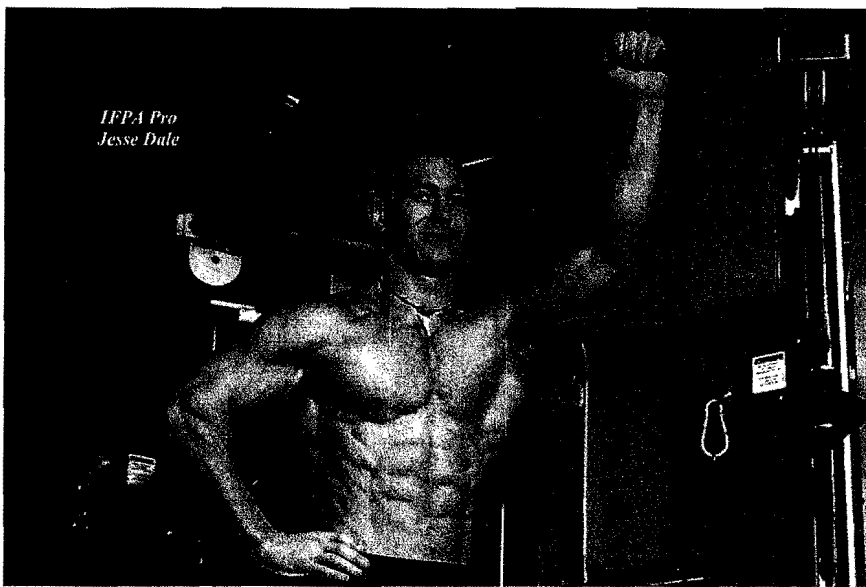
- Skinfold readings
- Girth readings

### Implementing Changes to Your Prep Plan

If these metrics are positive, if your strength is up, your energy level is good and you have a good look in the mirror, then it is safe to say you are on pace or ahead of the game. At this point, some minor changes may need to be made such as tweaking your protein intake IF your lean bodyweight has changed. If you are far ahead of schedule, then carbohydrates may be added, particularly pre-workout.



Take the worst case scenario: You are not on pace and behind schedule. Fear not; remember you had a contingency plan in place for minor setbacks, which was to take a very conservative, slow approach to your preparation. We need to identify the potential causes for why you are not on pace. In my experience, the culprit is normally an athlete not following the plan flawlessly. Be very honest with yourself regarding your execution. If poor execution is the case, then get on the plan and stay on. If it is not the case, then we can look at a few potential issues. Is your sex drive in the gutter and your energy horrible? This can indicate that your fat is a bit too low.



that when scientists showed that proteins, carbohydrates, and fats had respectively 4,4,9 calories per gram they were doing so using advanced laboratory equipment such as a bomb calorimeter which measures the heat capacity of various substrates. The fact that these substrates yield 4,4 and 9 calories in a controlled laboratory setting holds little weight in the dynamic world of human metabolism. Thus, for physique athletes, *where* the calories are coming from is a much better indicator for body composition than simply arbitrarily reducing energy intake. Let's provide some ways to provide a starting point for where your total energy intake should be. The most practical way to do this, without hiring a professional, is to track your food intake for two weeks while maintaining a neutral bodyweight. Do your best to keep

of fat now - 15.25 lbs of target fat = 12.75 lbs to lose. If you figure on about 1 lb lost per week for this example, it would take about 13 weeks of dieting to reach the target body fat level. You can plug in your numbers and see how long you should allow for. (Note: When dieting, competitors should weigh themselves first thing in the morning each time. Water weight can vary several lbs throughout the day. By recording weights at the same time of day, like first thing upon waking after about 8 hours of fasting insures more accurate weight readings when monitoring weight loss from one week to the next).

### Estimating Caloric Intake

The "calories in/calories out" philosophy is very widely accepted in this country as the be-all and end-all to weight loss. While it is true that there is a correlation between caloric (energy) intake and body mass, it is a weak correlation at best. A calorie is defined as the amount of heat required to raise the temperature of 1 kilogram of water by 1°C at 1 atmosphere pressure. Also called kilocalorie, kilogram calorie, large calorie or a unit of energy-producing potential equal to this amount of heat that is contained in food and released upon oxidation by the body (also called nutritionist's calorie).

Here is the logic to the calorie theory of weight loss:

- 1 gram of protein is 4 calories
- 1 gram of carbohydrate is 4 calories
- 1 gram of fat is 9 calories
- 1 g of alcohol is 7 calories

Thus the theory goes that if you take in less total calories than you expend, weight loss will occur. Often times this is the case, however, this weight loss can be as much as 30% muscle loss, 20% water loss and only 50% fat loss. Another potential pitfall with monitoring only caloric intake is



water intake and activity constant. You can track your caloric consumption by using one of the many free online databases available such as FitDay.com or CalorieKing.com. Make sure that you are as accurate as possible measuring out precise quantities and do not forget to log items such as creamer, gum, diet drinks with calories, etc. After your two weeks of tracking and maintaining a constant bodyweight, you can estimate your caloric average. Decrease this number by 600. In a controlled laboratory setting this would yield just over one pound of weight loss per week (600 calories x 7 days = 4,200 total calories less taken in over the course of a week). One pound of fat is equivalent to about 3,500 calories. Let's go back to our Figure athlete from earlier. After two weeks of measuring, her average caloric intake per day was 2,100 calories. 2,100 - 600 = 1,500 calories. Now comes the most important part of her journey. Where should her 1,500 calories of energy come from?

### Macronutrient Distribution

Entire books have been written on the major macronutrients (protein, carbohydrate, and fat) and it is beyond this article to dive too deeply into explaining the function and importance of each, so let's look at each macronutrient beyond its caloric value and instead consider each macronutrient as a messenger in the body that delivers important signals to complete certain tasks.

- Protein:** Signals protein synthesis (building muscle)
- Carbohydrate:** Signals the secretion of insulin aiding in the storage of nutrients within muscles as glycogen or triglycerides in fat cells.
- Fat:** Signals the secretion of certain anabolic hormones such as sex-hormone-binding-globulin (SHBG)-bound testosterone<sup>1</sup>

In addition to these signals, proteins break down into the building blocks (amino acids) of muscle, carbohydrates assist in fueling the brain and muscles in intense training, and fats are a great concentrated source of energy and can reduce inflammation.<sup>2</sup>

The amount of each macronutrient that is optimal for your contest prep is largely debated. However, we can

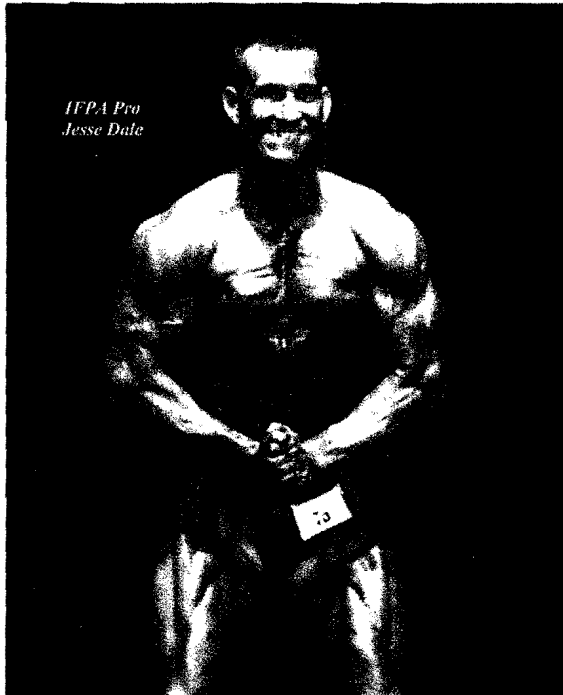
# NO NONSENSE GUIDE TO CONTEST PREP DIETING

By Jesse Dale, IFPA Pro

Perhaps you have considered competing in a physique contest, dreaming of being under the glorious stage lights, awing the audience with every pose! Then reality sets in and you think, "Where in the world do I start? How many calories should I be taking in? How much protein, fat, carbohydrates? What supplements do I need? How much or what kind of cardio? How far out do I start?" YIKES!!! So you start look around at dieting articles just to be beleaguered with 4-page advertisements for either a service or a supplement. At the end you're left with only vague *ideas* as to how to diet for a show. Dieting for a show is an incredibly dynamic process with a lot of variables and there is not a concrete, set way to design a one-size-fits-all diet. My goal with this article is to provide some solid groundwork to get YOU on stage this year without the hidden advertisements that you see in so many other magazines. By providing solid ground work you can adapt the recommendations in the article to fit you as an individual. If you are currently working with a contest preparation team then this will provide some of the why's as to what you are doing. With that being said, I firmly believe that working with a professional contest prep coach is an integral component to being totally prepared for competition. Even Olympic athletes have coaches and often times it is not the technical knowledge that athletes require from a coach but instead the psychological guidance.

## How Many Weeks Out To Start the Process

This is one area where a direct answer can be given. Your first step should be to get a detailed body fat analysis. DEXA scan, Bod Pod, and underwater weighing are the most accurate; their cost and impracticality make them less optimal choices. A trained professional with experience can administer girth/skin fold readings and estimate



your body fat percent. With this information you can then calculate how many pounds of fat need to be lost in order to compete at the desired body fat percentage. Depending on muscle mass, height, symmetry, hydration, and posing, most bodybuilders will look their absolute best around 3-5% body fat and most figure and bikini athletes will look their best at 9-12% body fat. Once you have estimated how many pounds of fat need to be lost, plan on losing one pound of fat per week leading up to the show. This may seem conservative but remember we do not want to sacrifice muscle and we want to come in looking full and healthy

as opposed to looking over-dieted and depleted. Another great argument for giving yourself plenty of time is that your body may respond differently to different approaches. This allows enough time to properly adjust your approach to make it more fitting as your needs evolve. For example, as you begin to get leaner you may develop a higher sensitivity to insulin, allowing for a greater amount of carbohydrate to be present in your diet. Some experts believe that endomorphic body types (short and robust) tend to respond better to lower carbohydrate intakes. Thus, one should leave enough time for trial and error in his/her prep.

As an example, take a female weighing 152 lbs. She has set a goal to be at 11% body fat for her competition. Say her test yields 18.6% body fat. 18.6% of 152 lbs is:  $0.186 \times 152 \text{ lbs} = 28.27 \text{ lbs}$ , so she **currently has about 28.25 lbs of body fat** on her frame. A bodyweight of 152 lbs - 28.25 lbs = **123.75 lbs of lean bodyweight** (muscle, water, bones etc.). Using algebra, (who said that stuff would never get used in the real world?) to find to her goal of 11% body fat:  $123.75 \text{ lbs} / x = 100\% - 11\%$ , or simply  $0.89$ ,  $123.75 = 0.89x$ ,  $123.75 / 0.89 = x$ ,  $139 = x$ , so about 139 lbs would be about the target 11% body fat. As a check, weight of 139 - lean bodyweight of 123.75 = 15.25 lbs of fat, and  $15.25 / 139 = 10.97\%$  or 11% rounded). 28.25 lbs