

POWER NUTRITION

by Ralph Ibanez

I was asked at the last team training after Sask Open, to write something about nutrition. This is due to the fact that many of our athletes, particularly the young ones, don't have a clear understanding of what proper nutrition is, and can engage in dangerous practices, especially when trying to lose weight. By coincidence, I was collecting information to write an article on specific nutrition strategies to enhance recovery (after high intensity exercise), which I will include here.

I'll try to keep it simple and to the point (which is not an easy thing for me to do, in fact, for quick info, and if you want to avoid this "lecture", and you are not interested in understanding the process, but just do it, go straight to the "Conclusions").

Dean and I (and most coaches who keep updated information in judo and other sports) do not follow the regular "Canada's Food Guide" gospel that most nutritionist do (wow! heresy!). Don't get me wrong. The guide is a very valuable piece of information, but it just refers to the amount of each nutrient you must have, without considering the very important relationship between nutrients at the time you are eating them. Like what would happen if I had all the protein I supposed to eat in one week for lunch today? That's OK because tomorrow I will have all my fat, right? WRONG!!!! Well, this is an extreme example, very easy to understand, and totally disagree with, but in fact not too far from reality. At the place where I work, there are a lot of extreme unbalances in the way food is distributed in the menu. Like there is one day in which you have beef soup (with lots of beef), tuna, and egg salad, all for lunch, and that is a huge concentration of protein. On another day there is hot-dogs and onion rings, a lunch which is about 80% fat, and perhaps 10% protein.

Many of us have tried to request changes, but the chef pulls the sheet signed by the government appointed nutritionist, according to which all the food groups are included in the proper proportions, (regardless of combinations and concentrations) so the menu is right (???)

Another problem with the food guide is its high emphasis on carbohydrates.

The Insulin effect

The main aspect the food guide doesn't consider is the hormonal effect of the way you combine foods at the time you eat them (if you want detailed information about the hormonal effect of food, read "Enter the Zone" by Dr. Barry Sears)(Rather than buy the book, check the provincial library <http://zgateway.lib.sk.ca/SAS-easysearch.jsp> Search for Author =Barry Sears and Title=Zone). In traditional nutrition wisdom there is a huge emphasis in carbohydrates, without explaining that what is considered as good sources of carbs, like pasta, bread, potatoes, rice, etc, if not eaten in the proper combination with protein and fat (yes, fat, a little bit of it but fat anyway, you even need fat to lose weight... more on this later), will raise the Insulin in your blood, and the carbs are going to be converted into fat.

You all have heard about the low carb diets (but, most likely, you haven't heard the whole sad story... ah, the drama, the drama). Well, it all has to do with the insulin effect.

Think about that big slurpee some of you like to drink. It's like a full cup of sugar, right? Well, your body can't deal with so much sugar. You have probably heard about some people with diabetes who have an insulin deficiency. This people can go blind; get limbs amputated, and all sorts of disastrous consequences, if artificial insulin is not administered to them to deal with the excess sugar in the blood. So, what does insulin do, then? It simply converts all that blood sugar into fat, so all that, hmmm, delicious slurpee goes to those gorgeous love handles you may have seen around.

Low carb diets, Dr. Atkinson's (etc, etc).

Enter the low carb wisdom, and/or high protein, high fat diets. All these, again, have to do with dealing with the insulin effect, and other hormonal effects that may help reduce weight.

What people promoting low carb diets don't tell you is that you NEED carbohydrates. What you need to reduce is the amount of starches in your diet (again, pasta, bread, corn, potatoes, rice, etc). You also need to completely eliminate refined carbs like white bread (almost all pasta is made with white flour), white rice, etc, as this is the equivalent of junk foods. These kinds of refined carbs are almost completely depleted of nutrients.

Include a small amount of whole grains in your diet, but get most of your carb needs from fresh fruit and vegetables which are choke packed with all sorts of nutrients very important for anyone's health, but crucial for high performance athletes (more on this later).

The most extreme examples of this are the Dr. Atkinson's diet and other that promote huge amounts of protein and fat, and no carbohydrates. Yes, with these diets you will have a powerful hormonal reaction that is going to force your body to lose weight... for a period of time (one of the effects is that since you don't provide fuel to burn by depleting your body from carbohydrates, you are forced to break protein to use it as fuel, as well as use fat as a fuel, a process which in itself is very hard on your body, particularly your kidneys, and makes you burn more calories, making you break down more protein and burn more fat).

However, this is a very inefficient way of getting your nutrition, and quite unhealthy in the long run (Dr. Atkinson himself died of heart disease, which should probably tell you something; you could also question the ethics of such diet when you are consuming so much protein, and 2 thirds of the children in the world don't have enough protein for proper growth, but that's another story).

Proponents of these diets some time say that our ancestors used to eat like that: you hunt, and then you have to eat as much meat as possible (and lots of fat as well), because they did not have deep freezers to keep the meat. And the rest of the time they eat berries and roots (almost no starches). According to this, our bodies have evolved (evolution) to eat that way. What they don't tell you is that they had to eat that way (because of the freezer thingy and) because hunting wasn't as easy, with very basic spears, and animals way faster than them, and they had to go through long periods of starvation, having to eat as much as possible when they could (we tend to get fat now as a way for the body to accumulate calories to keep you alive in times of starvation; skinny rats like me, who cannot not hold any fat, would probably had died at that time). What they also don't tell you is that, at that time, people normally died of old age at 35 or 40. Longevity wasn't the issue at the time, but immediate survival was.

But your body needs all sorts of nutrients, not just protein, or not just carbs, or whatever if you want to have a healthy diet, particularly if you are a high performance athlete, and most important yet if you are a growing (like teenagers) high performance athlete:

A power diet for your growing and sport needs:

If you are a high performance athlete, meaning you are training every day, or almost everyday, and every time you train you drive yourself to complete exhaustion (except during your periods of active recovery or super compensation), you are constantly depleting your body from essential nutrients.

Let's talk for instance about carbohydrates (once again). You can only store a limited amount of carbohydrates in your muscles, and in your body in general. What happens with the extra carbs you eat? As I said before, the insulin in your blood will convert them into fat. Now, if you eat very complex carbohydrates like vegetables and beans, they get digested very slowly, with a large part of the energy they release in the form of sugar, being burned in this very process of complex digestion. The rest, as it is being released slowly into the blood, gets mostly utilized as energy, and not converted into fat.

Chocolate milk

Now, when you finish a hard workout, your muscles are most likely depleted of glycogen, which are the carbohydrates stored in the muscles. Without this glycogen, your muscles wouldn't be able to move. Haven't you felt sometimes after judo or a hard workout that you can hardly move? That's because the glycogen in your muscles is depleted. Now, what happens if you don't immediately replenish these carbohydrates? Your body starts breaking down (cannibalizing) muscle protein to convert it into carbs, and then glycogen for the muscles. I don't want to go into longer explanations but believe me this is very bad. Enter chocolate milk. Remember at summer and winter camps? As per my request, Dan and all the great cooking volunteers had chocolate milk for us after practice: You need sugar immediately after a hard workout. I keep repeating this to my athletes, and I often hear, "oh yeah, I'm going home right away, and have something to eat". TOO LATE! You need the sugar (by the way, this is the only time when having sugar is good) immediately, not after going home, not after the shower, not even after cool-downs and stretching (like at Summer Camp we had the chocolate milk before cool-downs). Now, why chocolate milk? Protein is important after workout, but what is crucial is the sugar. They found out, however, that having protein at the time of ingesting the sugar makes the absorption much efficient and faster. Sport scientists and sport nutritionist had been experimenting with complex drink combinations (a lot of those very expensive sports drinks came from that kind of research). But in the last few years they found that 1% chocolate milk delivers all the nutrients in an almost perfect combination, not because of the chocolate, but because of the protein and sugar, plus the complex carbs, and multiple other nutrients (when you deplete your system of nutrients like after a hard workout, your body is primed to absorb all sorts of nutrients in a much efficient way, so if most of the time your body absorbs a fraction of what you eat, most likely, right after workout the absorption is 100% or near 100%).

Now, I know your next question, and the answer is a most definite NO!! If you are trying to lose weight, then it is a good thing to deplete your body of nutrients, isn't it? (I just said I did not want to go into the complexity of all this, didn't I?). Well, you can try it, but you are going to have the opposite effect. First, you will lose strength, as you will be losing muscle. With the strength the speed is going to go as well. Most important however, is unlike fat or other tissue, muscle burns calories even when you are watching TV, or sleeping. That is, if you go to the gym and exercise, you lose weight while you are exercising, but the effect of exercise will continue long after in the muscle tissue. That is why you see all those people doing hours and hours a week of aerobic exercise without losing weight. They could improve their results dramatically by reducing the cardio, and adding weight training in their routines.

So when you lose muscle as a result of not replenishing the carbs right after exercise, you end up losing a very important fat burning element. Many people who do this, or who go in those crush diets in which the first thing to go is muscle (fat is last), the end result is they bounce back, not to the same weight, but heavier (again as a result of losing that important fat burning element: muscle).

So, the conclusion to this is: HAVE YOUR CHOCOLATE MILK, or equivalent, right after intense exercise. Equivalent: for instance, Michela is lactose intolerant, so she has orange juice (sugar) and whey protein. She used to have soy protein, but that's very hard to digest, and its protein is not readily available, which defeats the purpose of having nutrients right after workout. Personally, I have yogurt that I make myself, and add honey and strawberries, or milk and a banana.

Regardless of what the equivalent drink is, milk (yogurt is the same) is the best option: A Canadian research compared having low fat milk (18 men), soy protein (19), and a complex carb drink (19) right after workout. All the drinks contained exactly the same amount of calories: After 12 weeks of training, the strength gains were quite similar in the 3 different groups. However, the ones who had milk or soy protein had a greater increase of fast twitch type of muscle fibers, but there was a significantly greater increase in the milk group than in the soy group.

Now you may say that you don't want to increase your muscle mass in you are trying to keep or lose weight. But the fact that you gain muscle fibre also means there is a much efficient process to repair damaged muscle fibres (a necessary result of high intensity training). Also, as was expressed before, your amount and quality of muscle will be crucial to maintain or reduce body weight (if you are worried about gaining weight through weight training, I can give you programs that will only increase your strength, and not your weight; essentially the type of training that makes you gain weight is hypertrophy or body building type which I give to some athletes, but adjusted to our sport).

Fruits and vegetables (and how much protein do we actually need?):

Why, then, do we need fruits and vegetables if my main athletic needs come from protein and carbs?

Well, despite what many people are saying today, and what bodybuilders practice, your body can only absorb so much protein. I had a colleague who used to practice bodybuilding. When he was about to enter a competition all he would eat was chicken breast, and not just a few, but anywhere between 8 to 12 breasts per day. That's about 5 to 7 times your daily protein needs. So, what happens to all that extra protein? (Our North American diet is saturated with a lot more food than you need, including protein, carbs and fat). You may have guessed it: it gets converted into fat (now when you only eat protein as he did, your body goes into shock from lack of other nutrients, burning a lot of calories/fat trying to satisfy its other needs, but this is quite unhealthy and you can be 100% sure that not a single ounce of all that extra protein gets converted into muscle). In fact, all the unnecessary foods you eat get converted into fat (that is nature's way of storing calories for times of need).

So, how much protein you actually need? A piece of meat (beef, fish, chicken, etc, or equivalent) the size of the palm of your hand 3 times per day. If you eat more than 3 times per day, which is actually more efficient and healthier, you need the same amount divided into more parts: 3 servings the size of your palm divided into 5 or more parts.

If you are going through a high intensity weight-training program, you can increase that amount slightly (to 3 and a half servings the size of your palm, perhaps). You may ask, but if I were working out, wouldn't eat as much protein as I can be beneficial? Well scientists already thought of that, and they tested it with athletes. The results were the more protein you ingested, the less testosterone and the less growth hormone your body produces, why? It is because one of the roles of these hormones is to recruit protein for your muscles. Now, if there is more than enough protein in your blood, there is no need for your body to produce these hormones. However, these hormones are crucial to build strength, power and speed through exercise. Women, for instance, have less testosterone than men; therefore they can gain less strength than men, even when working at the same volume and intensity. The same goes for the elderly: we produce less of these hormones than young people; therefore there is a loss of strength, power and speed, even when keeping the same levels of exercise. These, by no means is an excuse to stop exercising, on the contrary, if you don't exercise as an older person, your production of testosterone and GH goes to near nothing, and all your systems, not just strength, start to go down and fail. In fact for most gerontologists, the aging process and the failing of different physiological systems is precisely due to the drastic decrease in these 2 particular hormones.

Therefore, by eating too much meat, or other sources of protein, you may be defeating the purpose of getting stronger and faster due to not producing enough testosterone and GH. Back to carbs. I have already talked about starches, and how you should avoid refined sugar, and carbs, and reduce the amount of starches in your diet to a minimum. When eating grains, you should only eat whole grains. Potatoes and corn are less nutritious, and should be kept to a minimum. White rice and white wheat are empty calories, and you should completely avoid them (white bread, pasta, unless it is made with whole grains, etc), unless of course you want some extra fat in your body. Whole wheat and whole rice have important nutrients you need, but you should still eat them in moderation.

Something you should consider adding to your diet, if you haven't done it already, is beans. Beans are quite rich in complex carbs, they are nutritious, plus most beans already pack a great deal of protein, making them very close to a balanced food (by the way, the only food that, according to Dr. Sears is perfectly balanced is 1% milk, but that does not mean you can live on milk alone), and they are very good for dieting (more later).

As I mentioned before, you should get your carbohydrates needs from fresh fruit and vegetables. Other than general health, why is this so important for athletes? It has to do with the immune system in particular and, believe it or not, with performance in general. Again, why is the immune system so important for athletes? It all has to do with what scientists call the "J curve". Multiple studies have shown that if a sedentary person has a particular potential for getting colds, flues, or other infections, people who workout moderately have a reduced tendency to get sick, so in a graph, the line goes down (that is: exercise in moderation improves the immune system). Now, people who workout at a high intensity level have a greater chance of getting sick. In a graph, the incidence of infections goes higher, so the line draws a "J" in a slant (shocked? you shouldn't: it is a well known fact that when you exercise at this level, your homeostasis - that is all the systems like strength, endurance, speed, immune system, etc - goes down as a result of exhaustion. When you recover, all these systems, or your homeostasis, jump a little higher so you get stronger, faster, as well as your immune system improves, etc. But, it is during that period when all your systems are down, that there is a high tendency to get colds, infections, etc. Now, if you are training for an important competition (Sask Open, Nationals, The Olympics, etc), any period that you get sick is an interruption of your training. In addition, you lose strength, and other physical capacities you have worked so hard to attain. So scientists have been studying ways to reduce this tendency to get sick.

Also, there have been studies that show that high consumption of antioxidant and other nutrients found in fresh fruits and vegetables, not only protect the immune system, but improve physical performance (strength, endurance, recovery, etc) as well.

What they have found out is the obvious: things like vitamins and other antioxidants and nutrients do help a great deal to protect the immune system, and to avoid the high tendency to get colds and infections after high intensity exercise. The ones that stand out the most as beneficial help for athletes are: Vitamins C, D, A, E, minerals like zinc, selenium, magnesium, and lately, a new superstar: quercetin.

Quercetin is a bioflavonoid found in fresh fruit and vegetables, which is also a powerful antioxidant. They tested it with 40 athletes who were subjected to a few days of strenuous exercise. 20 of these athletes were given quercetin, and the other 20 a placebo. At the end of the experiment 9 athletes of the placebo group got sick, and only 1 in the quercetin got sick (it is expensive, but I take it, together with most of the ones I mentioned, as I'm one of those persons who tends to over train, and get lots of colds as a result).

However, what they have found, and this is remarkable and very important for athletes, is that all these naturally occurring chemicals work much efficiently in synergy, that is combined with each other in their natural form. For example, an apple (red apples are more nutritious than green ones, and delicious red apples have 4 times the nutrients of the closest next type of apple) has over 400 recognized nutrients (most of these compounds are near the skin to protect the apple, for instance, if you cut an apple it would soon turn brown, as it oxidizes in contact with the air, but you can protect it and prevent it from turning brown, by "painting" it with lemon juice whose vitamin C protects it from oxidation). Of these, they have only been able to isolate and study a few, all of them remarkable for your health. Now, Vitamin C, for instance is good for you, but it is much more potent in synergy with the other compounds you find it in its natural form. In other words, it is much better to eat a whole orange, than a vitamin C pill, as there are multiple nutrients, very important for your health, many of them which we don't even know, that are not only valuable for themselves, but in synergy with each other they act as a bomb of nutrients to

strengthen and protect your system. Personally, I don't like the amount of pesticides in fruit and vegetables. I soak my fruit in water with a bit of dishwashing soap. But you can't do that with apples as they are covered with wax, so I buy my "delicious" apples organic.

So, get your carb needs mostly from fresh fruit and vegetables. Another of my personal secrets: I hate vegetables, but I eat them anyway because I know I need them.

All fruits and vegetables are good, but the richest seem to be the dark coloured ones (different colours, different nutrients). Berries, and dark berries in particular, are quite rich in nutrients.

Now, there are some very nutritious fruits and vegetables that can still raise your blood insulin, like bananas and carrots. All you need to do is eat something with protein and a bit of fat to neutralize this effect.

To maximize the hormonal effect of carbs, in general, including high complex carbs like most vegetables, you should always have some protein and a little bit of fat with them (that is why a little bit of fat is important when you are trying to lose weight, like those people who eat fat free popcorn still get the insulin effect, and the carbs get converted into fat, and you avoid this effect by eating some protein and a little bit of fat with it). You can have a glass of 1% milk (any higher in fat is adding unnecessary fat to your diet, any lower you fail to have the proper nutrient combination to maximize your hormone effect), some unsalted nuts (almonds are quite good, but any nuts [except TV] will do), some low fat cheese, etc.

To get the perfect nutrient combination, again, read "Enter the Zone" by Dr. Sears. (Rather than buy the book check the provincial library <http://zgateway.lib.sk.ca/SAS-easysearch.jsp> Search for Author =Barry Sears and Title=Zone) I tried it myself, but I found it difficult to get the perfect combo, so I make sure I have some protein and fat every time I eat carbs.

Weight loss:

People do the craziest thing to lose weight, and athletes tend to be the worse. I remember an athlete (I won't mention names) who used to do the "jello diet", eating nothing but jello to lose the weight for competition. I recently heard of a boxer who used to make weight with the "lemon juice diet", having nothing but lemon juice. You have to remember, you run on fuel, just like your mom's car (or your car, you don't need to get offended). So what happens to the car if you don't fuel it up? Exactly! and that's what happens to you if you don't fuel up properly.

Puking:

Some people find it easier to eat whatever they want and then puke it out (a great way to lose weight for competition, right? WRONG!). Actually the Romans started this distinguished tradition. They had these places called the "pukitoriums" (NOT! in fact they were called the "vomitoriums") where they would go and puke, and then went back for more food. Those Romans! They raised orgies and decadency into an art form, didn't they?. Again, ethically this is completely wrong, when there are children dying of malnutrition, and some people are vomiting their food? Well, to tell you the truth, bulimic people are highly depressed, and with a variety of mental and emotional disorders, so ethics is the least of their worries. Our concern here is that some athlete may think this is an efficient way of losing weight. There is a number of side effects when puking "as a sport". I copied and pasted some of them:

- Erosion of tooth enamel because of repeated exposure to acidic gastric contents.
- Dental cavities, sensitivity to hot or cold food.
- Swelling and soreness in the salivary glands (from repeated vomiting).
- Stomach Ulcers.
- Ruptures of the stomach and esophagus.
- Abnormal buildup of fluid in the intestines.

- Disruption in the normal bowel release function.
- Electrolyte imbalance.
- Dehydration
- Irregular heartbeat and in severe cases heart attack
- A greater risk for suicidal behavior
- Decrease in libido

So, puking is absolutely out of the question.

Back to weight loss for competition: you should never be losing 10 + pounds. If you are that heavy, you should stay in the next division. If you want to lose that much weight you should start 2 months, at least, before the competition. Rapid weight loss should not be more than 3 to 5 pounds over a period of 4 weeks, minimum 2 weeks. I know you have heard of people losing outrageous amounts of weight for a competition. It doesn't mean it's right. You have probably also heard of those American wrestlers who died due to drastic weight loss. I rest my case.

When I lost my weight for the World Masters (about 5 pounds), believe it or not, I did it on chili. I made a big pot of red beans, with very low fat beef (more on this), and different types of vegetables. No starches whatsoever. I would carry one of those sealed plastic containers everywhere. Whenever I felt hungry, I would have a couple of spoons of chili, and a couple of bites of a banana. I would do this every hour to 2 hours approximately, and guess what, I felt no desperately hungry at all. Of course, after those 2 bites I wanted to keep on going, but I didn't, and after a few minutes I was perfectly OK. I lost the weight (and as you may know, I have very little fat to lose), I felt great, and it doesn't seem like I lost any muscle or strength. Soon after that Ewan (Beaton), the national coaches coordinator, asked me to do a weight loss plan for Amy Cotton who was going to the Olympics. I told her about my chili plan. She went, HUH? I think she doesn't like chili. I ended up giving her the principles to do it, but Ewan made a detailed meal plan for her.

At the end of your weight loss, if you still have some weight to go (day before, or right before weigh-ins) you can consider a bit of dehydration, but that cannot be a strategy for an extended period of time, or it is going to have drastic negative repercussions in your performance (speed in particular). If you dehydrate, you have to re-hydrate, and you can't do these by drinking a whole liter of water in one shot. You have to take small sips over an extended period of time (1 - 2 hours, depending on how much time is left for the competition). You should continue slow drinking during and after breakfast, and even during and after warm-ups. When you dehydrate, you also lose electrolytes, so instead of drinking straight water you can have a sport drink like Gatorade, or make your own Gatorade equivalent with one part orange juice, 2 parts of water, and a bit of salt (Sask Sport's recipe).

For more details on weight loss for competition, you can go into the following website (this is something Ewan Beaton and I wrote years ago for Judo Canada; Dan Found it; I had totally forgot about it): http://www.ipponjudoclub.com/coach_corner.htm
For general weight loss, you can mainly keep the principles I have mentioned above (check the conclusion).

The cabbage soup diet:

There is a diet quite efficient to lose weight in 7 days: the cabbage soup diet. It is almost 100% consistent with what I have preached here. The diet itself has different days with different things you can eat, and the cabbage soup as the staple, and as much as you want. I used this soup, not because I wanted to lose weight, but because of all the nutrients, and because the way it is made it also serves to flush junk from your body. I tweaked a bit for my own purposes, and I recommend my version. I'll give you the website, and what I changed. I use only fresh vegetables, no cans, and I my own spices (you can do whatever for taste, even follow their instructions). I add other vegetables, such as broccoli (made it different each time but keeping the basic ingredients). I added my own version of ground beef (more later). Instead of eating it for a

whole week (you can actually do the one week diet if you want to lose weight safely) I place the soup in small containers and freeze it, and get it out whenever I wanted some (the day before of course). This diet is something to consider if you want to lose weight quick, even for competition, but with the addition of protein (my beef version, chicken breast, etc).

Cabbage soup:

<http://www.aboutcabbagesoupdiet.com/recipe.htm>

My own version of ground beef (which I also freeze in small plastic bags, always keep an unfrozen bag, and use it for wraps, or anything I want):

I buy the cheapest, fattiest ground beef, I place it on a wok, with no oil, no water, and let it heat up, (I stir it the whole time to prevent it from sticking together) until it loses most of the fat. I drain it, and add boiling water, let it boil for another few minutes, drain it again, add some seasoning salt (I buy it without MSG), let it cool down, place it in the little bags, etc.

Food before and during competition:

Your breakfast has to be low on protein (protein takes long to digest, and it is to build and repair muscle, which is NOT going to happen during the competition, but it has a role in keeping an optimal hormonal balance, as explained before, which is crucial for your competition performance), high in complex carbs (this can be a problem as in most breakfast places, unless you eat toast, everything is made with white flour). Complex carbs are important for 2 reasons: one is to prevent the insulin effect which is going to rob strength and energy from your muscles, and 2nd, to keep a steady flow of energy into your muscles (as complex carbs digest slowly). You have to keep fat to a minimum: bacon is out of the question. Sausages? hmmm, maybe. Better to have dry brown toast rather than buttered. Now if you really want the butter on your toast, you better not have sausages, or compensate the excess fat some other way. So, what's the big deal with fat anyway? Fat coats the walls of your stomach, making digestion very slow and difficult. Now, if your stomach is struggling to digest your breakfast when you are called to fight, this is draining precious blood away from your muscles, and into your stomach, and you will have a fraction of your strength, speed and endurance (and you may feel like puking) during your fight(s).

A good example of breakfast is a couple of eggs, brown toast, and some fruit. If you know for sure you are not fighting until late in the day, it is a good idea to have a larger breakfast, like steak and eggs, or something that can sustain you throughout the day.

You should have plenty of water, some fruit juice, or Gatorade (or equivalent) through out the competition day. You should have some fruit, some power bars, maybe some whole-wheat bagels that you can eat throughout the day. Now, if you have been with me in competition, you know I make you buy some unsalted nuts as well (almonds better), so you can eat whenever you have some of your carbs, for the same reason I have been hammering: the protein and fat in the nuts will prevent the weakening insulin effect if you eat carbs alone.

If you have a fight in the next few minutes, have only fluids. You can eat if you know you are not going to fight for a while.

CONCLUSION:

I know I failed miserably to keep it simple and to the point, you don't need to rub it. In any case, this conclusion is straight and to the point.

- Proper nutrition is good nutrition for anybody, but particularly important for high performance athletes, as it will provide all the nutrients you need for recovery, to build strength, endurance, speed, etc. and to prevent infections and colds typical of high performance athletes.

- You need 3 pieces of meat (beef, chicken, fish, etc., or equivalent for protein) the size of the palm of your hand (no fingers included you cheater!) divided into 3 or (better yet) more servings

of food per day (again, when I say more than 3 servings, it does not mean more food, but THE SAME AMOUNT divided into more parts). More protein in your diet only gets converted into fat, and prevents the production of important power hormones like testosterone and GH. The only exception in which you should add some extra (half to 1 more serving per day) protein is when you are going through a very heavy and strenuous strength program.

- Always get some protein and a bit of fat when eating carbs, even the most complex ones, to prevent the fattening and weakening insuline effect. Readily available combinations of protein and fats are unsalted almonds or other nuts, a small glass of 1% milk, some low fat cheese, etc. (these are some ideas, but you can get creative).

- You should also eat your proteins with some carbs (most sources of protein, even the leanest ones, come already with some fat attached).

- If you want the perfect food combination for optimal hormonal balance, and for proper weight management, read "Enter the Zone" by Dr. Barry Sears .

- Cut down starches (bread, pasta, potatoes, rice, corn, etc) to a minimum, and make sure you completely eliminate refined grains such as white bread, white rice, etc, from your diet (this are empty calories, depleted of nutrients).

- Get most of your carbohydrates needs from fresh fruits and vegetables that are packed with essential nutrients you need for your health, your sport performance, and for your growth if you are still a teenager.

- Drink chocolate milk or equivalent right after intense workouts.