

The Athlete Diet
From North American Diet to Athlete Diet:
Tips for Making the Transition
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Elite Sport and Nutrition

What do you get when you take over 50 athletic young Canadians, a few hundred bottles of Gatorade, a few dozen pair of Oakleys, a few dozen swimsuits, about a hundred paddles or so, and mix them on high in the blender of Southern Florida?

You get the Canadian National Canoe/Kayak Team, that's what you get. (And you get a wild group of Canadians wreaking havoc all over a sleepy little vacation town.)



I know, as I just returned from spending a week with these athletes – one of the world's top groups of paddlers. The Canadian National Canoe/Kayak Team was one of the most successful Canadian summer sport teams from the 2004 Olympic Games in Athens. Hoping to repeat or improve their efforts from the 2004 games, they've just brought me on as their head of Sports Nutrition. So I guess it's my job to whip their sorry butts into nutritional shape. And I've got my job cut out for me.

Right now this team is in the middle of a four month training camp in which they train three times per day, totaling 3-6 hours of training. This ranges from weight training to high intensity intervals on the water, to longer duration technique work.

Once camp is over, they head on the road for three to four more months as the competition season begins. During this time, they'll tour the world, staying in hotels and sports centres, competing in dozens of different cities during this year's world cup circuit. (Think of the challenges that would arise if you were on the road, without coming home, for three to four months... *and* during this time you had to perform at your highest level physically!)

Then, once the competitive season is over, they'll head back to wherever it is that they call home and begin off-season training.



Each of their three phases of the year – camp, competition season, and off season – will have its own unique set of challenges. It also means that as their training changes, their nutrition must be periodized as well:

1. During camp, calorie needs are ridiculously high. Yet camp is also the time where body mass and composition need to be shaped for the upcoming season. So there needs to be a fine balance between eating for recovery and fuel while also eating for maximal lean body mass and minimal body fat.

2. During competition season, rigorous travel schedules and unpredictable meal offerings foist a whole new set of responsibilities on the team. It's imperative to make sure that all the hard work of training camp isn't squandered with poor dietary habits on the road.

Some athletes have no problem with body weight regulation during these tours, while others have a real hard time with this (gaining as much as 10 pounds or losing up to 15 pounds during the competitive season – and these are rarely "good" gains and losses).

3. Finally, during the off-season, it's important that with a lower training volume, calorie intake be tapered down in order to ensure excess body fat doesn't accumulate. However, it's still important to eat properly during this time as many athletes continue to train with a fairly high volume even during the off-season.

These three sets of challenges above form the basis of the higher level nutritional planning I regularly address with my elite teams. However, before any of this higher order planning is discussed, it's critical to begin by teaching these athletes what an "athlete diet" looks like. You see, most young athletes really have no idea what they should and shouldn't be eating.

Sure, most of the athletes I work with know to avoid junk food. They also know that hydration is important, so many of them drink either water or Gatorade during training. Some even eat a few extra fruits and veggies a day.

However, most athletes think this is sports nutrition. They think these elementary nutrition steps are enough to fuel elite training and performance in the modern age of high technology training, testing, and supplementation – not to mention the modern age of designer drugs. In reality, these "good nutrition" ideas are a step behind basic – they're primitive.

Despite all our current knowledge, to this day I never cease to be amazed at how very much the average athlete diet looks strikingly similar to the average North American diet. In fact, not only does it amaze me, it can, at times, piss me right off – especially when our athletes are being misguided by stupid advice.

The *Time* Interview

Back in 2004, I was interviewed by *Time Canada* for a special pre-Olympic nutrition story. The interviewer's thesis was garbage – basically, the article's theme was that high performance nutrition in Canadian summer sport was benefiting from a "back to the basics" movement; a movement back to how athletes ate a decade prior.

I disagreed.



After painstakingly detailing some of the cool advances in nutritional science that I was using successfully with some of my winter sport teams, the interviewer insisted that "No, it seems like many nutritionists are promoting a 'back to the basics' philosophy."

I asked her to clarify.

Back to the basics, to her, meant things like "drinking more fruit juice," "having more daily servings of dairy for calcium," "avoiding dietary supplements," "eating more pasta," etc.

My response: "The only nutritionists promoting these sorts of 'back to the basics' strategies are the ones that don't know anything more than the basics. And these

individuals aren't fit to advise athletes competing at a level where results are paramount and technology and information lines the path to these results."

I didn't even make a dent. Her mind was made up.

So, as you can imagine, the interviewer doggedly stuck to her thesis, went ahead and found a few registered dietitians to support the "back to the basics" thesis, largely ignored my advice and commentary, and ran the article to support this ridiculous idea.

In the end, whether the typical athlete diet strikingly resembles the typical North American diet because of socialization, environment, and/or the media information/misinformation discussed above, the fact remains – higher level performance requires something a little different.

Therefore, in this article, I'd like to compare and contrast the two types of intakes. Once this is accomplished, I'll give you some practical strategies for making the transition from a typical North American eater to a high performance eater. Whether you're training five hours a day or five hours a week, take heed of these nutritional strategies if optimal performance, body composition, and health are your goals.



The Average North American Diet

To shed a little bit of light on what I mean by the typical North American Diet, let's consider for a moment how the average North American lives each nutritional day.

First, they wake up and scramble around the house, getting ready for work. Because they've either gotten up too late, have chosen to read the paper or watch the news instead, or insist that they don't feel hungry in the morning, they either skip breakfast or eat a small breakfast that's usually a bowl of cereal, half a cup of milk, coffee, orange juice or some yogurt, a bagel, or something sweet. Then, they're off to run their day.

After a few hours at the office, they have another coffee (or three) and are starting to get hungry. If there are cookies or donuts around, they might munch on one. If there are

candies on a colleague's desk, they'll pop a few. If they don't find any snacks around, they simply fast until lunch, building up quite a hunger.

And lunchtime, of course, means sandwich time. Whether it's a lunch-meat sandwich, a burger sandwich, or a chicken sandwich, they chuck some sort of meat and/or cheese between some sort of highly processed bread and scarf it down. Maybe there's a sad-looking lettuce leaf in there or a three day-old soggy tomato, but let's be honest, these don't really count for veggies, do they?



If they're at a restaurant, the side dish might be some chips or fries and a pickle. And at this same restaurant, maybe they'll have some soup. If they're eating a meal they brought from home, they may just stick with the sandwich and throw in a cookie and some crackers. This lunch is washed down with some pop or some milk and it's back to work.

After another 5-7 hours, it's dinnertime. Of course, during the gap between lunch and dinner, if crackers, cookies, donuts, or candies are around, they might be snacked on for sheer boredom or hunger. Either way, dinner comes along and miracle of miracles, this individual's accumulating energy deficit leads to a huge appetite.

Now, as opposed to breakfast, lunch, and snacks, if a person is eating at home, dinner usually isn't that bad. In fact, home-cooked dinners are usually passable. Okay, maybe I should clarify, take-out, fast food, and microwavable dinners eaten at home are rarely passable. I'm talking about home-cooked dinners here. At least with these meals we typically see a good protein source, a good carb source, some vegetables, and maybe even some fruit.

Sure, this good meal is often tainted by the overabundance of cheeses, too much sugar, and high fat dressings and sauces, but at least we've seen some decent protein and some veggies for the first time today. Sometimes, due to the accumulating energy deficit and hunger, this meal is a little too big, but again, it's usually the best meal of the day.

Yet, at this point, the eating day isn't quite finished. With a few hours to go before bed, another snack usually creeps in before sleep. This is where ice cream, cookies, cakes, and all the little dietary treats make their appearance. This snack might come right after

dinner or it might come an hour or two later. But it usually comes. And then, before ya know it, it's bedtime and it all starts again the next day.

The Average Athlete Diet

I mentioned earlier that there were some striking similarities between the typical North American Diet and the typical athlete diet. Rather than taking my word for it, let's look at a typical athlete's day, one recorded by a canoe/kayak athlete I'm working with.

7:00 AM – 7:50 AM: Wake up, get dressed, and quickly eat a small bowl of cereal with banana and milk or two pieces of toast with peanut butter. This meal is light because the athlete isn't hungry and doesn't want to eat too much before his workout.

7:50 AM – 10:00 AM: Stretch, train, sip Gatorade, and return home.

10:00 AM – 11:00 AM: Rest, drink some fruit juice, and maybe eat a cheese and turkey breast (lunch meat) sandwich and some crackers or cookies, maybe not.

11:00 AM – 12:30pm: Weight train, drink water.

12:30 AM – 3:50 PM: Rest, nap, eat one or two sandwiches (cheese, lunch meat), and eat some fruit.

3:50 PM – 6:00 PM: Stretch, train, sip Gatorade, and return home.

6:00 PM – 7:00 PM: Prepare and eat dinner (stir fry with veggies and rice, or pasta with meat and salad, or lasagna).

7:00 PM – 11:00 PM: Relax, play cards, read, watch TV, maybe eat one more snack (bowl of ice cream and/or some cookies), maybe not.

11:00 PM: Bedtime

High Performance?

After looking over the average North American and the average athlete schedules above, you should notice quite a few similarities. Sure, there are some differences – the athlete is eating more total food, with the extra energy typically being weighted in favor of carbohydrates. Also, the athlete tends to eat a bit more frequently.

However, if you take an honest look at these daily schedules, the food choices and meal patterns are very, very similar. Let's look at the areas of overlap:

1. Both groups wake up too close to when they've gotta go, leaving little time to prepare, eat, and digest a good meal before work (whether "work" is an office job or it's training for sport). Both groups also complain that they're "not hungry" in the morning.
2. Both groups opt for scarfing down a quick, fast digesting breakfast that's low in calories, missing a significant protein portion, low in micronutrients and phytochemicals, low in good fats, and rich in processed, high glycemic index carbohydrates.
3. Both groups head to work relatively poorly fed.
4. Both groups are fairly inconsistent with their mid-morning snacks. Also, "snack" usually means more processed carbs and sugar without much in the way of fruits and veggies, quality protein, or good fats.
5. Both groups continue to work until lunch-time.
6. Both groups, during their lunch break, opt for a small amount of protein (a couple of slices of lunch meat and cheese) between a few slices of processed bread. So again, we're stuck with low protein, low fruit and veggie intake, and very little good fats.
7. Both groups go back to work (to the office or to rest and recover for the athlete).
8. Both groups are fairly inconsistent with their mid-afternoon snacks. Also, "snack" usually means more processed carbs and sugar without much in the way of fruits and veggies, quality protein, or good fats.
9. Both groups go back to work (at the office or back on the water).
10. After work, both groups have a decent, nutritionally balanced dinner with a good protein source, good carbohydrates, their first larger fruit and veggie portion of the day, and perhaps even some good fats if they've included olive oil or other sources of monounsaturated or polyunsaturated fats.
11. After their evening activities, both groups are inconsistent with their pre-bed snacks. These snacks, if they do eat them, usually are the worst of the day, consisting of larger servings of sweets or processed foods.

The Problems

With these comparisons made, let's discuss what the problem is with this type of intake, especially as it relates to the athlete:

1. Breakfast has been shown to be a critical daily meal. After a catabolic overnight fast, a balanced breakfast helps to regulate blood sugar, helps to regulate energy balance, and helps to control late-day cravings that lead to overfeeding on processed, high fat, and

high sugar foods. In both cases above, breakfast is either a very small feeding or is completely non-existent. This needs to change.

2. The bulk of total dietary energy is distributed later in the day in both cases above. What this means for our athlete is that hourly energy balance is hugely negative in the morning, and positive in the evening.

Studies at Georgia State University demonstrate that hourly energy balance is at least as important as total daily energy balance and should remain as close to neutral as possible throughout each of the 24 hours. This means a better distribution of calories throughout the entire day – not just loading up on a big dinner.

3. In the case of our athlete, by 12:30 he's expended nearly 1200-1800 calories from activity alone and would be lucky to have ingested 1000 calories and 50 grams of protein so far. One athlete I assessed had only eaten 200 calories by 12:30pm. As discussed above, energy intake needs to be better distributed through the day.

4. In both cases above, fruit and veggie intake, as well as protein intake, is very low until dinnertime. Just as total calorie distribution should be spread evenly throughout the day, so should macronutrient (protein, carb, fat) and micronutrient intake.



5. With blood amino acid concentrations low from the overnight fast and continually low throughout the early day (especially if the morning has two training sessions), catabolic conditions will predominate in the body, making recovery and adaptation difficult without a higher morning and early afternoon protein intake.

6. Throughout the morning and afternoon, vitamin and mineral intake as well as dietary antioxidant intake is quite low, creating a deficit that'll be hard to make up later in the day.

A fair number of sport athletes have been shown to be deficient in a host of vitamins and minerals, leading to impairments in nervous system function, metabolic processing, and oxygen delivery/consumption. It's hard to get the requisite amount of vitamins and minerals in only one or two meals. Now, this doesn't mean that athletes should start popping multi-vitamins. It means they need to get more fruits and vegetables as well as other micronutrient dense foods with every feeding, not just with one or two feedings per day.

7. Many sport athletes who don't actively pay attention to their protein intake tend to get too little protein for optimal recovery, preservation of lean body mass, and for the metabolic advantages associated with higher protein intake. Many of the athletes I regularly work with would benefit from a higher protein intake.

Now, this doesn't mean at the expense of good carbs and good fats. It's in addition to those things. Our athlete above is getting a good, high protein dinner, but it's difficult to take in enough total protein in only one or two protein rich meals. (Nor is it advisable.)

8. For both the physically active and even the sedentary individuals discussed above, dietary fat intake is usually out of balance in favor of saturated fat. Without actively choosing foods and supplements that contain mono and polyunsaturated fatty acid, fat balance is unfavorable. In our examples above, neither individual is getting enough good fats.

9. With most of the meals above being rich in simple, processed carbs, the hormone insulin isn't well-controlled. This means that athletes predisposed to fat gain will have a more difficult time controlling and/or losing body fat, even with higher training volumes.

10. With most of the meals above being rich in simple, low-fiber carbs, not enough dietary fiber is being ingested. This may mean constipation, poor blood sugar regulation, and poor GI health.

11. Our athlete above isn't actively taking advantage of the post-exercise improvement in insulin sensitivity and boost in post-exercise protein synthesis by eating carb and amino acid-rich foods right after exercise.

With all of these dietary limitations, it should be clear that although these athletes aren't dying of malnutrition, they're certainly not laying the groundwork for high performance. So let's talk about how to transition from the average athlete diet to an exceptional athlete diet.

From Average to Exceptional

At this point I'd like to lay out some of the practical tips my athletes have found most useful in improving their intake. I'll list them in the order that I typically present them to my athletes.

Step 1: Improving Workout and Post-Workout Nutrition

Decades of research has clearly demonstrated that glucose-electrolyte drinks ingested during and after training and competition can help stave off dehydration, delay fatigue in both longer duration activities and higher intensity, glycogen dependent repeated efforts, decrease the stress response to exercise, and can aid in glycogen resynthesis. So, any glycogen dependent bout not accompanied by some sort of glucose-electrolyte solution is missing something.

And, with some recent research demonstrating the performance boosting and recovery enhancing benefits of adding protein to such a glucose-electrolyte drink, an easy way to instantly increase total daily energy intake as well as improve training quality, recovery, and adaptation, is to sip a protein + glucose + electrolyte beverage during training as well as drinking one immediately after training.

Typically, as athletes can use an average of anywhere from 30-60g of carbohydrate per hour of training, I recommend athletes sip a drink containing at least 30g of carbohydrate during each hour of training. Also, as athletes can lose an average of anywhere from 500-1000ml of water per hour, I recommend that this carbohydrate be mixed with at least 500ml of water.

Finally, the addition of protein in anywhere from a 1:4 (P:C) to 1:2 (P:C) ratio is recommended. Depending on how many sessions they have that day and what the rest of their diet looks like, I'll determine whether or not they need a second workout drink – a post-workout drink.

Step 2: Improving and Scheduling Breakfast Meals

As mentioned above, breakfast is a critical meal, and if you're not eating it or if you're just eating some nutritionally empty meal that's missing a good amount of protein and micronutrients, you're nutritionally handicapping yourself early in the day.

To improve your breakfast meals, be sure to include a serving or two of lean protein like an egg white omelet (throw in a yolk or two), some cheese, some dairy like plain yogurt or cottage cheese, or even some lean turkey or chicken bacon or sausage. You could even throw in a protein shake on the side.

Men should be shooting for 30-50 grams of protein and women should be shooting for 20-40 grams of protein in this meal. If you don't know how much protein your food contains, check out this resource: [USDA Nutrition Database](#).

As you'll likely be training in the next hour or two and will be sipping your carbohydrate/protein drink, you can get away with a breakfast that's a little lower in starchy carbs. So focus your breakfast meal on high quality protein, lots of fruits and veggies (make a smoothie, juice some fruits and veggies, eat fruits and veggies raw, whatever), and good fats (more on how to do this below).

At this point, most athletes offer either the "I'm not hungry" or the "I don't want to throw up during training" objection. Here's how I address these:

"I'm not hungry." – If you've not been eating breakfast for quite some time, your body adjusts to this and therefore you won't be hungry. Once you start eating breakfast regularly, you'll be hungry every morning. For the first week or two you may feel uncomfortable but you'll adjust. Keep focused on the benefits.

"I don't want to throw up during training." – If you wake up 30 minutes before training and try to have a large meal just before training, of course you'll feel uncomfortable! Duh!

Instead of waking up at the last minute, wake up two hours before training, have a great breakfast, and by the time you're ready to train, you should feel fine. I know you don't want to wake up earlier than you have to – especially if you're training early (8 AM or so), but create a morning ritual and things will be just fine.

When I used to have early morning workouts, I'd get up two hours before training, eat a great breakfast, and read for an hour or so before heading to train. It was a great, quiet, relaxing time and I was well prepared for training. Another option is to eat your breakfast and take an hour nap before training. Or you can eat your breakfast and reflect upon your upcoming training session.

However, let's say you try these strategies and you still feel sick during training. In that case, you'll need to play around with food choices until you find the foods that are best tolerated. Perhaps you can tolerate an omelet with cheese and veggies as well as some fruit on the side.

Or maybe liquid nutrition (like a protein shake) is best for you. Perhaps you'll want some oats with yogurt, protein powder, nuts, flax seeds, and berries. Experiment until you find what works for you.

Step 3: Adding good fats

The balance of fat in your diet can control some very important physiological functions, from inflammation to hormonal balance to metabolic rate. So it's important to make sure you're adding some good fats to your daily intake.

Since most North Americans get more saturated fat than polyunsaturates and monounsaturates, we'll focus on adding some of these latter fats into the plan. The best way to do this is to include the following foods every day:

Fish Oil – 6-10 total grams per day (1-2 capsules with each meal)

Olive Oil – 1-2 tablespoons per day (unheated; just add to cold food or after cooking)

Flax Oil – 1 tablespoon per day (unheated; just add to cold food or after cooking)

Mixed Nuts

Ground Flax Seeds (Flax Meal)

Avocados

Coconut Oil or Butter (for cooking)

If you include each of these foods every day, your fat balance will be well taken care of.



Step 4: Improving lunch meals

Some of the same strategies we used for breakfast are relevant for lunch as well. Just like with breakfast, the typical lunch is usually light in protein as well as fruits and veggies and good fats. Also, if an athlete has just trained (or, in the case of our canoe/kayak athletes above – trained twice already), a sandwich or two won't be providing enough carbs either. So we'll want to bump up the total calorie intake as well as the protein, carb, fat, and fruit/veggie intake.

One of the easiest ways to do this is to make sure you're double-cooking dinner each night. Simply cook a double-portion of each dinner meal and eat the second half of dinner for lunch each day. This is assuming your dinner meals are complete and contain a complement of protein, carbs, fats, and fruits and veggies.

If this is impossible, seek out lunch options that contain the same balance a typical well-constructed dinner might have. Skip the lunchmeat sandwiches and go with higher-protein stir-fries made with a ton of veggies and whole grain rice, whole wheat pastas with high protein side dishes and a big fruit and veggie salad, etc.

Step 5: Improving dinner meals

As discussed, most dinners tend to be fairly complete with proteins and veggies, making their first real appearance of the day. However, that doesn't mean that folks are

maximizing their dinner intake. Some great strategies for improving dinner meals are as follows:

Include whole grain versions of breads, pastas, and rice instead of their processed (white) counterparts. Also try including things like oats, quinoa, etc.

Include high fiber foods like legumes (a variety of beans, lentils, etc).

Include lean protein like chicken, fish, beef, turkey, or even more exotic meats like elk, bison, kangaroo, venison, etc. Tofu is another good protein option.

Always include a few servings of veggies.

Always include some good fats to compliment the fats that'll be already present in your meat choices.

Have fruit dishes or homemade smoothies for dessert.

Of course, these rules apply for lunch meals and, as mentioned above, your best bet is to double cook dinner and serve the second portion for lunch the next day.

Step 6: Strategies for increasing fruit and veggie intake

When most people think of veggies, they think of boring salads and wilted, freezer-burnt veggies. Well, that's not what I think of at all.

Sure, you could make big, plain spinach salads, but why not add more exciting ingredients like fresh fruits, raisins, mixed nuts, seeds (pumpkin, sunflower, etc), beans, avocados, and flavored vinegars and oils? Also, if you're not eating fresh, steamed veggies, you're missing out.

There are many ways to include more veggies, from eating them raw, to steaming them, to juicing them in a blender, to cooking them with your pasta or rice, to including them in stir-fries.

I personally also like to make sauces with them. One of my favorite sauces is influenced by Indian cooking and is made from three cups of spinach, two whole tomatoes, one whole onion, and three cloves of garlic. I puree these in a blender with 0.5 cups of water. Then I mix in some salt, pepper, and curry powder (eliminate if you don't like spicy food). I then cook this with some chicken breasts or lean meat and add some yogurt for a few minutes at the end of the cooking process. Just think of how much veggie goodness is included in this delicious meal.

With respect to fruits, as mentioned above, you could certainly eat them raw (like you would an apple), but you can also make fruit salads (add a little lemon to preserve it for longer than a few hours), you can include the fruit in your veggie salads, and you can

blend up some fruit with a little water or dairy (plain yogurt, cottage cheese, etc.) and make a juice drink/smoothie.

Remember, one serving of fruit/veggie is about 0.5 cup and you should be aiming for 10-15 servings per day.

Step 7: Strategies for improving snacks

As mentioned earlier, typical snack choices are usually full of sugar, processed carbs and a bunch of other nasty things like trans fats and artificial ingredients. So you're going to need to start choosing better snacks.

My favorite snack for when I'm on the go is a Super Shake, which usually includes some fruits, veggies, protein, good fats, and more – all blended up.

Another snack I like is made by mixing plain yogurt or cottage cheese with frozen berries, mixed nuts, and vanilla protein powder. Another variation on this theme is yogurt or cottage cheese with peanut butter, a banana, and ground up flax seeds with chocolate protein powder.

You can also try yam chips and fresh veggies dipped in homemade hummus. I have a few hard-boiled eggs along with this snack.

As with the other meals, what's important here is to get a complete snack. I think of every feeding (snack or meal) as an opportunity to either improve my body or to make it worse. By making sure I get some good carbs, fruits and veggies, good fats, and good protein with each feeding, I'm making sure I'll avoid deficiencies in energy or nutrients.

Transition Complete

Hopefully the message of this article has become clear. Whether you're a high level competitive athlete or just a recreational exerciser, eating like the typical North American is bad, bad news. And despite your exercise habits, eating this way might have you ending up looking more like the typical North American than you want.

To avoid making the same mistakes other North Americans make, it's important that you view each meal or snack as an opportunity to get a good balance of nutrition. This means making sure each meal has a good protein source, a good fat source, and a good amount of fruits and veggies.

And if you're a hard-training athlete (especially if you're training three times per day), you'll also be adding a good amount of starchy carbs to the mix. (If your training volume is low or you're training infrequently, you'll want to eat fewer starchy carbs, saving the majority of them for the three hours after exercise.) Finally, it's important not to neglect workout nutrition.

While some of the strategies in this article are very practical, they're founded on a firm base of nutritional science. It's important for today's athletes to make the best use of the latest sports science information. So if you're a hard-training athlete, start using these strategies immediately and record your progress.

Keep an adherence chart. Measure your body weight and body fat. Record your energy and recovery levels. Keep track of your performance testing results. And adjust your intake as often as you need to in order to keep the progress going.